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SELLING THE DEPARTMENT OF ENERGY'S DEPLETED URANIUM STOCKPILE: OPPORTUNITIES AND CHALLENGES

HEARING

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

APRIL 3, 2008

Serial No. 110–103

Printed for the use of the Committee on Energy and Commerce

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SELLING THE DEPARTMENT OF ENERGY'S DEPLETED URANIUM STOCKPILE: OPPORTUNITIES AND CHALLENGES

THURSDAY, APRIL 3, 2008

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS,
COMMITTEE ON ENERGY AND COMMERCE,
Washington, D.C.

The subcommittee met, pursuant to call, at 10:08 a.m., in room 2322 of the Rayburn House Office Building, Hon. Bart Stupak (chairman) presiding.

Members present: Representatives Stupak, Green, Doyle, Dingell (ex officio), Shimkus, Whitfield, Blackburn, and Barton (ex officio).

Staff present: Scott Schloegel, Richard Miller, John Sopko, Kyle Chapman, Carly Hepola, Alan Slobodin, and Dwight Cates.

OPENING STATEMENT OF HON. BART STUPAK, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. STUPAK. This meeting will come to order. Today we have a hearing entitled "Selling the Department of Energy's Depleted Uranium Stockpile: Opportunities and Challenges." Each member will be recognized for a 5-minute opening statement. I will begin.

Today's hearing will focus on what options the Department of Energy has to convert its depleted uranium into cash as a result of a huge jump in uranium prices. Department of Energy has two choices: to quickly seize the opportunity, or push the decision to the next administration.

More than 700,000 tons of depleted uranium hexafluoride tails are stored in 60,000 cylinders in Paducah, Kentucky and Portsmouth, Ohio.

Eight years ago, this corrosive radioactive material was considered worthless and represented an environmental liability. Since 2000, however, uranium prices have jumped tenfold from around $8 per pound to $95 per pound for long-term contracts.

Chart number 1 shows how the spot prices spiked as high as $140 per pound last summer. This sharp jump in prices is due to tight uranium markets and has given American taxpayers a potential financial windfall. Approximately 260,000 tons of so-called "high-assay tails" are now worth an estimated $7.6 billion, according to the Government Accountability Office, GAO. In order for the Department of Energy to capitalize on this potential windfall, they must act now. This year only 55 percent of the reactor fuel used

worldwide is met through mined uranium, but new mine production will start to catch up with demand over the next 3 to 6 years.

DOE has two primary ways to turn the excess depleted uranium into cash.

Option number 1 is to auction the tails to utilities or uranium enrichment companies. The Committee wrote Under Secretary Albright on February 14 asking that DOE solicit nuclear utilities to assess their interest in a depleted uranium tails auction. Instead of a "yes" or "no," DOE responded that they will be doing a cost-benefit study. This is puzzling and looks like a formula for paralysis-by-analysis.

At our request, GAO polled potential buyers and found utility industry interest in high assay tails. Slide 3 shows large amounts of uncovered utility demand for uranium over the next 5 years. In order to auction the uranium tails, GAO cautioned that the Department of Energy, DOE, may need additional statutory authority. This hearing will seek DOE's views on whether it agrees that added legal authority is required.

Option 2 for the Department of Energy is to contract out re-enrichment of the high-assay tails and then sell the enriched uranium. DOE faces a challenge with this option because there is very limited available capacity at the Nation's only uranium enrichment plant, which is operated by USEC. DOE could only re-enrich about 14 percent of the tails over the next 4 to 5 years. Nevertheless, this could yield as much as $1.4 billion after costs of re-enrichment.

To purchase enrichment services, DOE will have to negotiate a sole source contract with USEC. This hearing will explore whether DOE has enough bargaining leverage to negotiate a fee in addition to USEC's cost that is fair to the taxpayers. If USEC's monopoly position has the Federal Government over a barrel, what is DOE's strategy?

I note with irony that the bottleneck in enrichment capacity would not be confronting DOE today if even a handful of the lavish promises made to the Committee by the advocates of USEC's privatization had been kept.

My good friend and subcommittee member, Ed Whitfield, has proposed legislation that directs DOE to enter into a sole source contract with USEC and commence tails enrichment in 120 days. While I commend his desire to see DOE take action, this proposal, I believe, would force DOE to bypass its procurement rules. Secondly, it would not give DOE sufficient time to audit the reasonableness of USEC's actual costs. Third, it fails to cap the fees that could be paid to USEC, while DOE must negotiate against the clock. And fourth, it would not allow DOE to seek a better deal for taxpayers by auctioning the tails to utilities and letting them use their bargaining power with USEC.

The good news is that 5 to 10 years out, enrichment companies will increase capacity to re-enrich tails, thus helping to relieve the bottleneck. However, if DOE waits 5 years, there's a risk that prices could deflate and taxpayers will receive a significantly smaller return.

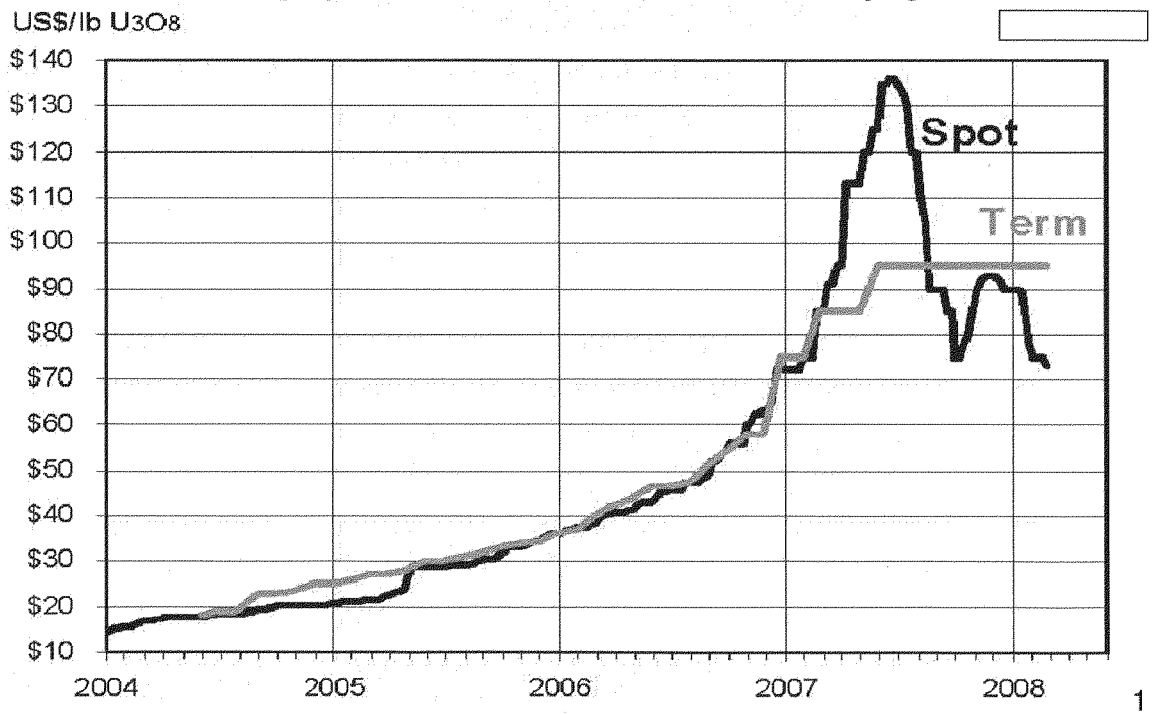
It is important to note that Congress is well aware of the negative impact on uranium sales and mining that occurred 8 years ago when massive government stockpiles were liquidated through

USEC's privatization. DOE must be careful not to flood the market and negatively impact the industry again. This may require establishing floor prices or quotas. This committee held a hearing on April 13, 2000 to look at how the domestic industry was damaged.

The uranium tails are currently a liability sitting in 63,000 metal containers that you can see on the slide at two government facilities. It should be noted that we have been down to Paducah, Kentucky, and in fact, I think the slide right there, the picture right there, Ed, I think it's actually Paducah, Kentucky.

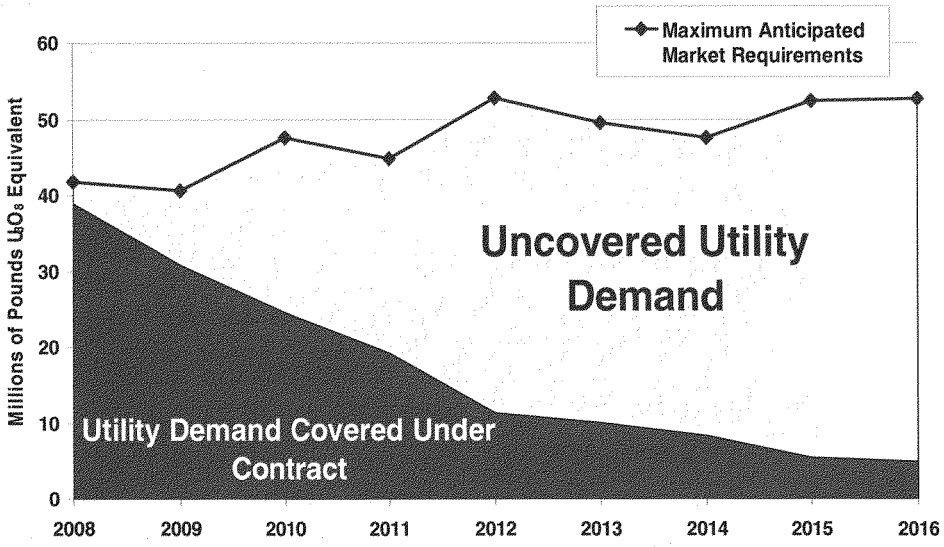
[The accompanying slides follow:]

Uranium Prices 2004-2008
Spot U_3O_8 Price and Long-Term U_3O_8 Price



Source: UxC

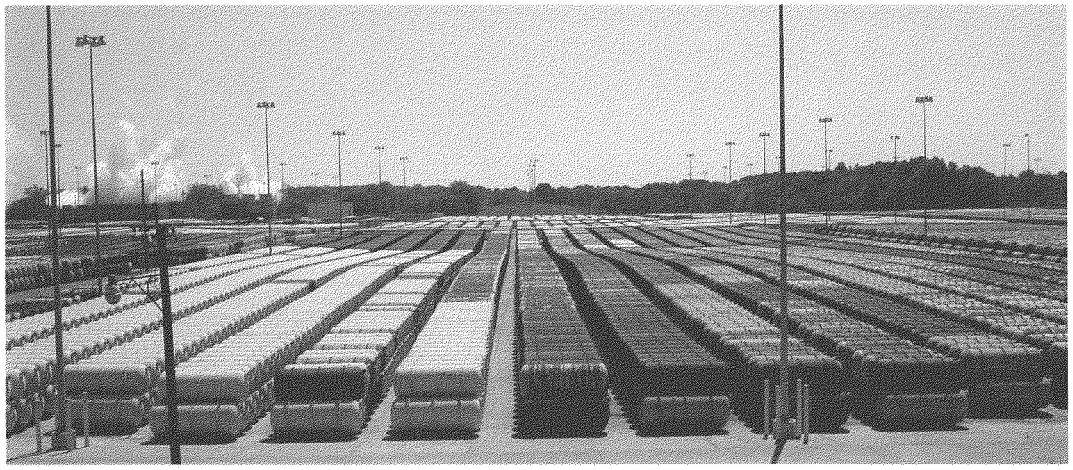
Uncovered Demand for Uranium
U.S. Civilian Nuclear Reactors
2008-2016



Source: EIA Form EIA-858 "Uranium Marketing Annual Survey" (2006)

E= values estimated

Uranium Storage Cylinders at DOE's Paducah Uranium Enrichment Plant



Source: DOE

So we have the opportunity to convert this waste. And the whole purpose of this hearing is we have an opportunity to convert this waste into cash, and the American taxpayers expect the Department of Energy to seize the opportunity.

That ends my opening statement. Next turn to the ranking member, Mr. Shimkus, from Illinois.

Mr. SHIMKUS. Thank you, Mr. Chairman. I am going to yield to Ed Whitfield, former ranking member of this subcommittee and, of course, been involved with this to start our opening statements.

Mr. STUPAK. Very good. Ed, you want to start with the opening? And I enjoyed the time in Paducah and learned a lot. So this hearing is——

Mr. WHITFIELD. Thank you.

Mr. STUPAK [continuing]. Very timely.

OPENING STATEMENT OF HON. ED WHITFIELD, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF KENTUCKY

Mr. WHITFIELD. Well, Chairman Stupak, thank you. And, Mr. Shimkus, I genuinely appreciate your waiving your opportunity for an opening statement to give me that chance to speak on this important issue.

I think Chairman Stupak set out the parameters pretty well in his opening statement, and we all know from the GAO study that there are only three things that can be done with these canisters of depleted tails. One, we can continue to store them and leave them the way they are. Two, DOE can attempt to reprocess them by entering into a contract with USEC. And three, the possibility of selling them at an auction at what we think would be discounted price. And then there also is the question of whether or not DOE can legally sell this material under existing federal law.

But there are about 40,000 of these canisters in Paducah, Kentucky and around 20,000 up in Portsmouth, Ohio. And each canister weighs in the neighborhood of about 14 tons is my understanding.

But to give you a little bit of history on this, the Paducah Gaseous Diffusion Plant opened in the early 1950s to supply enriched uranium for national defense purposes. Later, it transitioned to enriching uranium for fuel in nuclear power plants. Now, the plant is scheduled tentatively to close in the next few years. For more than 50 years, this plant has provided good jobs to the community and has been a key element in the local economy and has contributed in a significant way to the energy needs of our country. But the plant has also left the community with a legacy of environmental damage. And, of course, prior to USEC operating, it was operated by the Federal Government. And part of that environmental legacy are these tens of thousands of cylinders containing waste tailings from the uranium enrichment process.

The anticipated resurgence and growth in nuclear power in the United States and worldwide has helped drive up the value of uranium. In 2000, uranium was trading at $7 a pound. Last August, the price had gone to around $138 a pound. So suddenly this waste that nobody wanted has become very valuable, and we will hear today from witnesses just how valuable it has become.

Now, I have proposed and introduced legislation H.R. 4189 that would allow the Department of Energy to enter into a contract with USEC to reprocess this material and sell the product. GAO has estimated that this could generate revenue anywhere from $7.6 billion up to $20 billion, just depending upon what the spot market price would be at that particular time.

So it seems to me that the time to act is now. This can be a win-win-win situation. Without this legislation, it is my understanding that DOE would need almost up to a year just to negotiate a contract with USEC to do this. But it can be a win-win-win situation if we could pass this legislation because a win for the environment at Paducah and at Portsmouth, a win for the taxpayers because it would recoup a significant amount of money, and a win importantly for the workers at the Paducah plant because this would add to the life of the plant and would allow us to continue to operate the plant for many years to come.

So as we consider this opportunity, I want to raise a concern that must be addressed. And as I said, throughout the plant's history, no one has been knocking on the door offering to relieve the communities of this waste. And so now this idea of selling it at auction I do not think is the best way to proceed. But the purpose of this hearing—and I want to thank Chairman Stupak and Mr. Shimkus once again. The purpose of this hearing is to get the issue out there. Let us talk about it. Let us look at the positive aspects of it. Let us look at the negative aspects of it and then move forward in what we hope will be the best solution for our country, for the workers, and certainly for the environment.

And so with that, I look forward to the testimony of the witnesses today and thank you once again.

Mr. STUPAK. Thank you, Mr. Whitfield. There is another hearing going on in the larger hearing room downstairs. So members will be coming back and forth. I appreciate members being here. Mr. Green for an opening statement please.

OPENING STATEMENT OF HON. GENE GREEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. GREEN. Thank you, Mr. Chairman. I am glad you noted that because the Health Subcommittee is meeting on the Medicaid issue, and I will have to go there. But I want to thank you for holding the hearing today on "Selling the Department of Energy's Depleted Uranium Stockpile: Opportunities and Challenges."

The Department of Energy has been processing uranium for commercial and national defense purposes since the 1940s. This process creates both enriched uranium and leftover tails of depleted uranium that are stored in giant metal cylinders at the DOE uranium enrichment plants in Paducah, Kentucky and Portsmouth, Ohio.

I was actually on this subcommittee in 2000 when we had our last hearing, and our colleague, who is now governor of Ohio, Ted Strickland, that was included in his district. So it brings back some memories.

Once considered at that time only a waste product and a liability, current market prices are rapidly changing this dynamic. In only 8 years, uranium prices have skyrocketed to $200 per kilogram

from as low as $21 per kilogram. Over 700,000 metric tons of uranium are stored at the DOE sites, but some officials estimate that only a third of this material contains higher concentrations of uranium that can be profitably enriched. With the potential for the substantial returns to the Federal Government, we must ask if we are moving quickly enough to protect the American taxpayer and our domestic industry.

On March 12, DOE issued "The Secretary's Policy Statement on the Management of the Department of Energy's Excess Uranium Inventory." The statement outlined a general framework for managing inventories, including the need to maintain sufficient inventories for DOE missions and to maintain a strong domestic nuclear industry. This is critical, considering that when this subcommittee held a hearing on the privatization of the U.S. Enrichment Corporation back in 2000, DOE had transferred stockpiles of un-enriched uranium to the USEC, which sold these stockpiles on the open market and threatened the viability of the domestic uranium mining industry.

While the statement on the uranium management was commendable, DOE has not yet completed a detailed assessment of the options, nor determined how these options would be implemented. I hope this hearing will help us evaluate the policy options for us so we can quickly and safely manage our excess uranium inventory in the best interest of both the taxpayers and the nation. And again, Mr. Chairman, if there is legislation needed and that turns out from our testimony, I know our committee will be more than happy to consider and see how we can pass it.

But it is interesting from the last—almost 8 years ago when we had a hearing, when we were worried about the loss of it now with the market, from the slides you showed, we need to keep it because we do have an expanding nuclear capability in our own country. But we also need to see if we can benefit the taxpayers from it. And I yield back my time.

Mr. STUPAK. I thank the gentleman. Mr. Shimkus, for opening statement please.

OPENING STATEMENT OF HON. JOHN SHIMKUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. SHIMKUS. Yes, Mr. Chairman. I will be brief. It is pretty clear in the understanding of this. One point is that DOE spends about $200 million per year just to store these inventories. So if we could eventually get those off the books, there is a savings there. We must, although, balance the opportunities to promote the nuclear industry but limit uranium sales to prevent adverse effects on the uranium markets.

Both Ed and I come from mining regions, coal mining to be exact. But it takes a long time to develop a mine. So there is a window of opportunity, and we don't want to close mines because of flooding the market. So we need to be concerned about that.

I would also like to introduce into the record the 1-page document, which is in the binder anyway, "Industry Position on Disposition of DOE's Nuclear Fuel Industry." This consolidated industry position statement represents a significant amount of work and

should be used by DOE as a guideline for future sales. Without objection?

Mr. STUPAK. Without objection.

Mr. SHIMKUS. Thank you, Mr. Chairman. As you saw the slides, we need to move pretty rapidly to take advantage of the spike in sales and not wait like we do at the spur all the time. We buy high, and then we sell when it is cheap. We are not really good managers of what the private sector can do. And with that, Mr. Chairman, I will yield back my time.

[The prepared statement of Hon. John Shimkus follows:]

STATEMENT OF HON. JOHN SHIMKUS

Mr. Chairman, thank you for this hearing.

On March 12th of this year, the Department of Energy issued a policy statement that outlines a framework for managing its extensive uranium inventories. This important policy statement balances the need to maintain a strategic inventory of uranium; support a growing domestic nuclear infrastructure; and generate revenue from the sale and transfer of excess inventories.

The Department's uranium inventories are in many forms, including depleted uranium—the subject of today's hearing—as well as natural uranium, low enriched uranium, and highly enriched uranium. DOE spends about $200 million per year just to store and secure these inventories.

Sales of uranium could generate revenue to the government to offset storage and security costs, pay for environmental cleanup from uranium contamination, and reduce program expenditures.

In developing its uranium sales strategy, DOE has solicited the views of the nuclear industry. Clearly, the nuclear utilities want DOE to sell as much of its uranium inventories as possible, while uranium producers prefer DOE restrict further uranium sales. DOE must balance opportunities to promote the nuclear industry, but limit uranium sales to prevent any adverse impact on the uranium markets.

If the Department is not careful, it could flood the markets with its vast inventories, thus driving down the price of uranium and discourage future investment in domestic uranium mining and conversion services.

Mr. Chairman, I would like to introduce into the record the 1-page document titled, "Industry position on disposition of DOE's nuclear fuel inventory." [DOCUMENT] This consolidated industry position statement represents a significant amount of work and should be used by DOE as a guideline for future sales.

Today's hearing will focus on the depleted uranium inventories at Portsmouth, Ohio and Paducah, Kentucky. The sale of depleted uranium represents a great opportunity to score a win for the American taxpayer. What was once considered a costly liability could be worth as much as $7.6 billion. These sales projections, however, change every day with the volatile price of uranium.

I wish DOE could convert these wastes to riches right away while the price of uranium is elevated—but it does not seem to be that simple. DOE must first complete cost-benefit studies on different options, complete environmental assessments, and clarify the legal authorities for each option. There are many challenges; however, DOE must not interpret these challenges as an opportunity for inaction.

My colleague Ed Whitfield represents the Paducah site, and he has thought more about these issues than any of us. Ed was interested in depleted uranium back when it was just a waste—long before it became a valuable commodity. I look forward to hearing his ideas, as well as the testimony of the witnesses today.

I thank the Chairman and I yield back.

Mr. STUPAK. I thank the ranking member. Mr. Doyle for an opening statement please.

OPENING STATEMENT OF HON. MIKE DOYLE, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF PENNSYLVANIA

Mr. DOYLE. Thank you, Mr. Chairman. I want to start my remarks by thanking you for holding this hearing so that Congress

can look into this important matter. I don't believe there are many here on The Hill who are looking at this issue, so I applaud you for bringing the subject into the limelight.

Every one of us, those who support nuclear power and those who are opposed to nuclear power, can agree that one of the concerns with nuclear power is the disposal of the waste that results from the power it produces. Clearly this same waste is produced with the manufacture of nuclear weapons also. The cost of storing and treating this waste is a major burden on the Department of Energy.

However, as the price of uranium has increased, I believe the department is facing a golden opportunity. We have the chance to turn a major liability into a valuable commodity, through which the department can generate new revenue to help expand their mission as we move towards energy independence and combating global warming. And in the long run, we would be taking the first step towards eliminating one of the biggest concerns regarding nuclear power.

I applaud the secretary for his statements of March 12, where he said the department was going to begin to look at setting up a process through which they would sell off up to one-third of their depleted uranium tails over the next 13 years. My concern is that the studies and the bureaucracy of the department may lead to a long process that will not conclude until a point when the price for uranium has dropped to a level where the enrichment and sale of the department's nuclear waste is no longer economically viable.

Let us be real here. The only reason we are looking at this matter is because the price for uranium is at near record levels. Like any other commodity, its price will fluctuate, and it is critical that the department acts quickly so they can maximize the value of this depleted uranium. Time is not on our side, and we do not have time for countless studies or years of rulemaking before the next administration puts a policy in place.

It is rare that government has a chance to turn a liability into an asset, and we need to move forward aggressively so that we don't miss the opportunity. As we will see here in this hearing, there are many questions out there regarding issues ranging from the authority for the sales through where the money generated from the sales go. I for one believe that this committee is ready to work on a bipartisan basis to do our part to ensure that the department has the legislative authority it needs to move forward expeditiously.

I look forward to hearing from our witnesses, what specific actions they believe we should take. However, one concern I do have in particular is where the money from the sale goes. As I understand it, the money generated from these sales will go to general treasury. Considering that the department is already paying for the storage of these materials out of their woefully inadequate $25 billion annual budget, it seems to me that the department should receive all of the funds that are generated from the sale of its waste.

This walled-off approach will give the department more of the tools they will need if we are ever going to be able to adequately

address the dual challenges of energy independence and global warming.

In conclusion, Mr. Chairman, we are looking at a golden opportunity to turn a liability into an asset. Our biggest challenge isn't partisanship, mass opposition to a sale, or administration pushback. Our challenge is time and the prospect that prices will fall over time. We must act quickly, we must act intelligently, and we must act with focus. Let us not let this opportunity go to waste. With that, Mr. Chairman, I yield back my time.

Mr. STUPAK. Thank the gentleman. Ms. Blackburn, opening statement.

Ms. BLACKBURN. Thank you, Mr. Chairman. I am going to waive my opening statement. Want to welcome those that are here. Those of us in Tennessee are very concerned about this issue, anxious to hear what you have to say, and look forward to reserving my time for questions.

Mr. STUPAK. All right, I think Oakridge, Tennessee is Congressman Wamp's area. Thanks for being here. That concludes the opening statement by members of the subcommittee. I now call our first panel. They are already up there. So we have the Honorable Dennis Spurgeon, Assistant Secretary for Nuclear Energy at the U.S. Department of Energy; Mr. Robert A. Robinson, Managing Director for Natural Resources and Environment at the Government Accountability Office. Mr. Robinson is accompanied by Mr. Ryan Coles, the Assistant Director, and Ms. Susan Sawtelle. Did I say it right, Sawtelle? The Associate General Counsel of Natural Resources and Environment at GAO.

It is the policy of this subcommittee to take all testimony under oath. Please be advised that you have the right under the rules of the House to be advised by counsel during your testimony. Do any of you wish to be represented by counsel? Seeing nod of heads that would indicate no.

[Witnesses sworn.]

Mr. STUPAK. We will start with the opening statements. Five-minute opening statement. You may submit a longer statement for the record. Mr. Spurgeon, you want to start with you please, sir.

Mr. SPURGEON. Thank you, sir.

STATEMENT OF DENNIS SPURGEON, ASSISTANT SECRETARY FOR NUCLEAR ENERGY, U.S. DEPARTMENT OF ENERGY

Mr. SPURGEON. Chairman Stupak, Congressman Shimkus, and members of the subcommittee, thank you for the opportunity to discuss the Department of Energy's inventory of depleted uranium and its potential sale.

DOE is custodian of the Federal Government's inventory of uranium considered excess to national security needs, which is equivalent to about 59,000 metric tons of natural uranium contained in a variety of forms, most of which are not readily usable. This inventory is expensive to manage and to secure. In light of the significant increases in market prices for uranium in recent years, the uranium in this inventory is a valuable commodity, both in terms of monetary value and the role it could play in achieving vital department missions and maintaining a healthy domestic infrastructure.

I would like to devote my time today to discussing the origin of this resource and outlining the precepts that the department uses to determine how best to manage our excess inventory.

Large-scale uranium enrichment in the United States began as part of the atomic weapons development during World War II.

Depleted uranium hexafluoride, or DUF_6, results from the process of making uranium suitable for use as fuel for nuclear power plants or for defense applications. The use of uranium in these applications requires increasing the proportion of the fissionable ^{235}U isotope found in natural uranium through an isotopic separation process called uranium enrichment.

The byproduct of enrichment is DUF_6, sometimes referred to as tails. DOE maintains approximately 700,000 metric tons of DUF_6 in approximately 59,000 cylinders stored at the Paducah and Portsmouth sites. Until recently, the entire inventory of DUF_6 was considered a financial liability to the department because it required safe storage and security until converted to uranium oxide and dispositioned.

On March 12, 2008, Secretary Bodman issued a policy statement on management of the Department of Energy's excess uranium inventory. This document establishes a framework by which the Department of Energy will prudently manage and disposition its excess uranium inventory. Mr. Chairman, I would like to request that this policy statement that the secretary issued be entered into the record.

Mr. STUPAK. Without objection.

Mr. SPURGEON. Thank you, sir. The department has broad authority under the Atomic Energy Act of 1954 to loan, sell, transfer, and otherwise utilize its inventories of depleted natural and enriched uranium. In exercising this authority, the department must act consistent with the other relevant statutory provisions such as the USEC Privatization Act, which imposes limitations on certain specified actions.

DOE will maintain sufficient uranium inventories at all times to meet the current and reasonably foreseeable needs of its missions. The department is working to ensure that these needs are identified, the needed amounts and forms of uranium are quantified, and the uranium inventory is appropriately maintained. DOE will only sell or transfer uranium that is in excess of those needs.

Implementation of our uranium inventory management policy must ensure transparent and competitive procedures. Transactions involving non-governmental entities will be undertaken in a transparent manner and in a competitive manner, unless the Secretary of Energy determines, in writing, that overriding departmental missions needs dictate otherwise.

All transactions involving excess uranium transfers or sales to non-U.S. government entities must result in the department's receipt of reasonable value for any uranium sold or transferred to such entities. The department will seek to manage its uranium inventories in a manner that is consistent with and supportive of the maintenance of a strong domestic nuclear industry.

As a general matter, the introduction into the domestic market of uranium from DOE inventories in amounts that do not exceed 10 percent of the total annual domestic fuel requirements should

not have an adverse material impact on the domestic uranium industry.

The department anticipates that it may introduce into the domestic market in any given year less than that amount or, in some years, for certain specific purposes, such as the provision of initial cores for new reactors, more than that amount.

DOE will conduct analyses of the impacts of particular sales or transfers on the market and the domestic uranium industry prior to entering into any sales or transfers. DOE has also determined that it may be feasible to manage its uranium inventories by entering into arrangements with existing and potential operators of nuclear fuel cycle facilities in a manner that supports the maintenance and expansion of the domestic nuclear fuel infrastructure. Any such arrangement, however, must contain reasonable terms and conditions and be competitive to the extent practical.

Additionally, DOE will consider using its uranium inventory to address prolonged severe disruptions in the supply of uranium that cannot be addressed practically through the marketplace or that threaten to cause shutdown of commercial nuclear reactors in the United States.

DOE is considering converting a portion of its uranium inventory into low-enriched uranium, or LEU. Conversion to LEU would, in many cases, reduce inventory levels, minimize inventory management, surveillance, and maintenance cost, and provide DOE with increased flexibility for meeting potential future programmatic needs, and enhance the value of converted uranium.

As of March 31, 2008, the spot price for natural uranium was $71 per pound. Five years ago, natural uranium was quoted at $10.10 per pound. As the uranium spot market price increased to above about $24 per pound, more of the high assay DUF_6 become economically attractive to the commercial nuclear industry for purchase or enrichment.

The department has initiated the process of identifying categories of depleted uranium that have the greatest potential for market value and/or use by the department and then conducting an appropriate cost-benefit analysis to determine what circumstances would justify enriching and/or selling depleted uranium rather than pursuing current plans to convert it and ultimately dispose of it.

The department will seek to obtain the best economic value for the department in light of our identified objectives and needs. Actions consistent with the policy statement have been and are currently underway. The National Security Administration is continuing its efforts to blend down HEU surplus to national security needs to meet its nonproliferation objectives.

Additionally, DOE is conducting the necessary national environmental policy act analysis on the re-enriching of DUF_6 in the department's inventory. As DOE completes requisite analysis with respect to specific types of DUF_6, natural uranium and LEU, we expect to undertake specific transactions in the near future based on these determinations. This concludes my prepared statement, Mr. Chairman. I would be pleased to answer any questions the Committee may have.

[The prepared statement of Mr. Spurgeon follows:]

STATEMENT OF

DENNIS R. SPURGEON

ASSISTANT SECRETARY FOR NUCLEAR ENERGY

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS

COMMITTEE ON ENERGY AND COMMERCE

U.S. HOUSE OF REPRESENTATIVES

APRIL 3, 2008

Chairman Stupak, Congressman Shimkus, and Members of the Subcommittee, I would like to thank you for the opportunity to discuss the Department of Energy's inventory of depleted uranium (DU) and its potential sale.

DOE is custodian of the federal government's inventory of uranium considered excess to national security needs, which is equivalent to about 60,000 metric tons of uranium (MTU) of natural uranium (NU) contained in a variety of forms, most of which are not readily usable. This inventory is expensive to manage and to secure. In light of the significant increases in market prices for uranium in recent years, the uranium in this inventory is a valuable commodity both in terms of monetary value and the role it could play in achieving vital Departmental missions and maintaining a healthy domestic infrastructure.

A portion of this inventory is about 75,000 MTU[1] of DU, which is equivalent to about 26,000 MTU of NU[2]. I would like to devote my time today to discussing the origin of this resource and

[1] UF_6 having an assay equal to or greater than 0.35% but less than 0.711% ^{235}U.
[2] NU equivalent based on 0.20% ^{235}U tails assay

outlining the precepts the Department uses to determine how best to manage our excess inventory.

Large-scale uranium enrichment in the United States began as part of atomic bomb development during World War II. Uranium enrichment activities were subsequently continued under the U.S. Atomic Energy Commission and its successor agencies including DOE. At that time uranium enrichment was carried out at three locations: the K–25 Plant (now called the East Tennessee Technology Park or ETTP) at Oak Ridge, Tennessee, the Paducah Site in Kentucky and the Portsmouth Site in Ohio.

Depleted Uranium Hexafluoride (DUF_6) results from the process of making uranium suitable for use as fuel for nuclear power plants or for defense applications. The use of uranium in these applications requires increasing the proportion of the ^{235}U isotope found in natural uranium through an isotopic separation process called uranium enrichment. Gaseous diffusion is the enrichment process currently used in the United States. The DUF_6 currently produced as a result of enrichment typically contains from 0.20 percent to 0.30 percent ^{235}U and is stored as solid in large metal cylinders located at the gaseous diffusion facility. Overall, DOE maintains approximately 700,000 metric tons of DUF_6 in about 58,000 cylinders stored at the Paducah and Portsmouth sites.

As the price of uranium has fluctuated through the years, enrichment plant operators have varied the amount of the useful isotope ^{235}U (the assay) remaining in the waste (called operating tails) to

meet customer requirements and operating parameters. As a result, DOE's inventory of depleted uranium contains varying assays of ^{235}U.

Until recently, the entire inventory of DU was considered a financial liability to the Department that required its safe storage and security until it is converted to a uranium oxide and disposed. However, the recent increases in the price of natural uranium relative to its enrichment costs have changed the economic options for DOE. As the uranium spot market price increased above $75 per kgU as UF_6[3], the .35% ^{235}U assay DU became economically attractive to the commercial nuclear industry for purchase and enrichment.

Information published by Ux Weekly, show the spot market price for NU was $73 per pound U_3O_8 or $179.74 per kgU as of March 24, 2008. Five years ago, natural uranium was quoted at $10.10 per pound. While the spot market for commodities are volatile, and these prices are somewhat below the highest levels recorded a few months ago, this increase in the value of uranium presents new options for DOE in managing its excess uranium inventory.

The Department has broad authority under the Atomic Energy Act of 1954 (AEA) to loan, sell, transfer or otherwise utilize its inventories of depleted, natural and enriched uranium. In exercising this authority, the Department must act consistently with other relevant statutory provisions, such as § 3112 of the USEC Privatization Act which imposes limitations on certain specified transactions.

[3] The spot market price of uranium reached $74.75 per kgU as UF6 in April 2005, ref. Uranium Exchange (Ux) Price Indicator

DOE intends to maintain sufficient uranium inventories at all times to meet the current and reasonably foreseeable needs of its missions. The National Nuclear Security Administration, the Office of Environmental Management, and my Office of Nuclear Energy are working together to ensure these needs are identified, the needed amounts and forms of uranium quantified, and the Department's uranium inventory appropriately maintained. The Department will only sell or transfer, after proper procedures are followed, uranium that is excess to those needs.

Transactions involving non-U.S. Government entities will only be undertaken in a transparent and competitive manner, unless the Secretary of Energy determines in writing that overriding Departmental mission needs dictate otherwise. All transactions involving excess uranium transfers or sales to non-U.S. Government entities must result in the Department's receipt of reasonable value for any uranium sold or transferred to such entities.

As a general matter, DOE has determined that the introduction into the domestic market of uranium from DOE inventories in amounts that do not exceed ten percent of the total annual domestic fuel requirements should not have an adverse material impact on the domestic uranium industry. Consistent with applicable law, DOE will conduct analyses of the impacts of particular sales or transfers on the market and the domestic uranium industry, prior to entering into particular sales or transfers.

Additionally, DOE will consider using its uranium inventory to address prolonged severe disruptions in the supply of uranium that cannot be addressed practically through the

marketplace and that threaten to cause the shutdown of commercial nuclear reactors in the United States.

As the market price of NU increases, the value of the relatively high assay DU (having greater than 0.35% ^{235}U) makes it attractive for re-enrichment. The material between 0.30% ^{235}U and 0.35% ^{235}U may also become economically attractive for re-enrichment. This material provides an additional 100,500 MT DU which is equivalent to about 25,075 MTU of NU[4]. The exact amounts and the economic attractiveness of the DUF_6 depend on many variables, including assumed re-enrichment tails assay, the cost of re-enrichment, the quantity of the material, and the market price of NU.

Making this DU useable as LEU would require considerable processing, depending on the uranium's form, assay level, and degree of contamination. In light of the significant increases in market prices for uranium over the past three years, however, some of the depleted uranium in DOE's inventory, especially that with higher assay levels, has become a potentially valuable commodity. The Department has initiated the process of identifying categories of depleted uranium that have the greatest potential market value and/or use to the Department, on the basis of assay level, degree of contamination and other relevant factors and then conducting appropriate cost-benefit analyses to determine what circumstances would justify enriching and/or selling potentially valuable depleted uranium rather than pursuing current plans to store, process and ultimately dispose of it. If a change in current plans is warranted, DOE will seek to obtain the best economic value for the taxpayers, in light of the Administration's identified objectives and needs.

[4] Assumes an average DU assay of 0.325% ^{235}U based on a tails assay of 0.20% ^{235}U.

DOE is currently taking actions with respect to the excess uranium inventory. The National Nuclear Security Administration is continuing its efforts to downblend HEU surplus to national security needs to meet its nonproliferation objectives. Additionally, DOE is conducting the necessary National Environmental Policy Act (NEPA) analysis on the re-enriching of DU in the Department's inventory. As DOE completes necessary analysis with respect to specific types of DU, NU, and LEU, we expect to undertake specific transactions on the basis of these determinations.

This concludes my prepared statement and I would be pleased to answer any questions the Committee may have.

The Secretary of Energy
Washington, DC 20585

Secretary of Energy's Policy Statement on Management of the Department of Energy's Excess Uranium Inventory

INTRODUCTION

The Department of Energy has a significant inventory of uranium that is excess to United States defense needs. This inventory is expensive to manage and to secure, and consists of uranium in various forms, most of which are not readily usable. However, in light of the significant increases in market prices for uranium in recent years, the uranium in this inventory is a valuable commodity both in terms of monetary value and the role it could play in achieving vital Departmental missions and maintaining a healthy domestic nuclear infrastructure. This Policy sets forth the general framework within which the Department prudently will manage its excess uranium inventory.

MANAGEMENT PRINCIPLES

Legal. The Department has broad authority under the Atomic Energy Act of 1954 (AEA) to loan, sell, transfer or otherwise utilize its inventories of depleted, natural and enriched uranium. In exercising this authority, the Department must act consistently with other relevant statutory provisions, such as section 3112 of the USEC Privatization Act which imposes limitations on certain specified transactions.

In the absence of otherwise applicable statutory authority, the Department may not retain any money it receives from the sale of uranium and use that money for Departmental programs. Instead, money received normally will be deposited into the miscellaneous receipts account in the United States Treasury. However, the Department does have authority under the AEA to engage in barter transactions, where it transfers uranium and receives services or another form of uranium as compensation. Under this statutory authority, the Department has structured several arrangements so that some uranium can be used to offset the costs of certain services that have been provided to the Department such as downblending, enrichment, decontamination or storage. The Department will consider using this approach in the future where it determines such an approach is reasonable, furthers the interests of the Department and results in the receipt of reasonable value for the material exchanged for services.

Before making any final decision on a particular action, the Department must comply with applicable requirements of the National Environmental Policy Act of 1969 (NEPA). This may include the preparation of an environmental assessment, an environmental impact statement, or other analyses, as appropriate.

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Department of Energy Needs. The Department should maintain sufficient uranium inventories at all times to meet the current and reasonably foreseeable needs of Departmental missions. The National Nuclear Security Administration, the Office of Nuclear Energy, the Office of Environmental Management and other relevant Departmental offices will work together to ensure these needs are identified, the needed amounts and forms of uranium quantified, and the Department's uranium inventory appropriately maintained. The Department will only sell or transfer uranium that is excess to those needs.

Transparency and Competitive Procedures. Transactions involving non-U.S. Government entities will be undertaken in a transparent and competitive manner, unless the Secretary of Energy determines in writing that overriding Departmental mission needs dictate otherwise. All transactions involving excess uranium transfers or sales to non-U.S. Government entities must result in the Department's receipt of reasonable value for any uranium sold or transferred to such entities. Reasonable value takes into account market value, as well as other factors such as the relationship of a particular transaction to overall Departmental objectives and the extent to which costs to the Department have been or will be incurred or avoided.

Energy Security. To the extent practicable, the Department will manage its uranium inventories in a manner that is consistent with and supportive of the maintenance of a strong domestic nuclear industry. Consistent with this principle, the Department believes that, as a general matter, the introduction into the domestic market of uranium from Departmental inventories in amounts that do not exceed ten percent of the total annual fuel requirements of all licensed nuclear power plants should not have an adverse material impact on the domestic uranium industry. The Department anticipates that it may introduce into the domestic market, in any given year, less than that amount, or, in some years for certain special purposes such as the provision of initial core loads for new reactors, more than that amount. Consistent with applicable law, the Department will conduct analyses of the impacts of particular sales or transfers on the market and the domestic uranium industry, prior to entering into particular sales or transfers.

The Department also has determined that, in some cases, it may be feasible to manage its uranium inventories by entering into arrangements with existing and potential operators of nuclear fuel cycle facilities in a manner that supports the maintenance and expansion of domestic nuclear fuel cycle infrastructure. The Department believes that it is in the energy security interests of the United States to maintain and expand this infrastructure. Any such arrangement, however, must contain reasonable terms and conditions, be competitive to the extent practicable, and be otherwise consistent with this Policy. Further, and if the Department determines appropriate on a case by case basis, the Department would consider using its uranium inventory to address prolonged severe

disruptions in the supply of uranium that cannot be addressed practically through the marketplace and that threaten to cause the shutdown of commercial nuclear reactors in the United States.

CONVERSION OF URANIUM INVENTORY INTO LEU

The Department uranium inventory contains uranium in various forms. These forms include highly enriched uranium (HEU), low enriched uranium (LEU), natural uranium and depleted uranium. For many purposes, uranium is not readily usable unless it has been converted into LEU. In addition, the conversion of HEU, natural uranium and depleted uranium into LEU would, in many cases, reduce inventory levels, minimize inventory management, surveillance and maintenance costs, provide the Department with increased flexibility for meeting potential future programmatic needs, enhance the value of the converted uranium, and, if sales occur and the Department was able to retain the proceeds from those sales, result in the need for fewer appropriated dollars to meet the Department's mission needs. Furthermore, the conversion of HEU into LEU promotes nuclear non-proliferation objectives by reducing the amount of HEU available.

Accordingly, the Department is considering conversion into LEU of a portion of its uranium inventory, and retaining that LEU in the Department's uranium inventory. The Department will base any decisions to engage in such transactions on cost-benefit analyses and other relevant factors.

For non-proliferation reasons, the Department already has an active program for downblending much of its excess HEU into LEU, and has issued a Record of Decision under NEPA concerning that activity and the use of the LEU in commercial reactors. Over the coming years, the Department expects to downblend most of its excess HEU into LEU. The Department will continue the downblending of HEU to promote non-proliferation objectives and to assure a supply of LEU to meet various Departmental programmatic needs.

The Department's current excess uranium inventory also contains a considerable amount of natural uranium, primarily in the form of uranium hexafluoride. Much of this uranium meets commercial-grade specifications but cannot be sold until after March 2009 because of a prior agreement between the United States and Russia. While this natural uranium already has value in its current form, conversion into LEU would minimize management costs to the Department while enhancing the usability and value of the uranium. Accordingly, the Department is evaluating the desirability of enriching a portion of this natural uranium into LEU, taking into account costs, market conditions, programmatic priorities and potential uses. As part of this evaluation, the Department will initiate work on cost-benefit and environmental analyses that will support a decision on how to proceed.

Most of the remaining excess uranium in the Department's inventory consists of depleted uranium. Making this depleted uranium useable would require considerable processing, depending on the uranium's form, assay level, and degree of contamination. In light of the significant increases in market prices for uranium over the past three years, however, some of this depleted uranium, especially that with higher assay levels, has become a potentially valuable commodity. The Department will identify categories of depleted uranium that have the greatest potential market value and/or use to the Department, on the basis of assay level, degree of contamination and other relevant factors. The Department then will conduct appropriate cost-benefit analyses to determine what circumstances would justify enriching and/or selling potentially valuable depleted uranium rather than pursuing current plans to store, process and ultimately dispose of it. The Department will seek to obtain the best economic value for the Department, in light of the Department's identified objectives and needs, and will proceed with this effort in the near future.

Samuel W. Bodman
Secretary of Energy

March 11, 2008
Date

Mr. STUPAK. Thank you. It is my understanding, Mr. Robinson, you will be giving an opening statement. If you would start please.

STATEMENT OF ROBERT A. ROBINSON, MANAGING DIRECTOR FOR NATURAL RESOURCES AND ENVIRONMENT, GOVERNMENT ACCOUNTABILITY OFFICE; ACCOMPANIED BY RYAN COLES, ASSISTANT DIRECTOR; AND SUSAN SAWTELLE, ASSOCIATE GENERAL COUNSEL, NATURAL RESOURCES AND ENVIRONMENT, GAO

Mr. ROBINSON. Thank you, Mr. Chairman. Usually when we are here to testify, we are talking about some serious management problem of some program, but today, as members have all mentioned, we are here to talk about opportunities and taking advantage of opportunities.

A couple weeks ago we were here talking about the IPP program as kind of an example of the former. And this is, dramatically different situation than that. Here we are talking about an opportunity to generate billions of dollars in return to taxpayers over time. Alternatively, the material that we are talking about could serve as a kind of strategic uranium reserve, providing an alternative to and protection against disruptions in the worldwide supply of uranium, on which the U.S. is heavily dependent.

In the year 2000, when uranium prices were about $21 a kilogram, the depleted uranium in DOE's inventory had essentially no commercial value and in fact cost the taxpayers about $4 million a year just to store and maintain safely. These annual costs are still being incurred. Now, however, we estimate that the tenfold increase in uranium prices gives the portion of this depleted uranium with the highest ^{235}U content a net value of about $7.6 billion at today's prices.

While it is hard to keep the eye from lighting up at such a figure, it is important to note that this value is quite sensitive to uranium prices and is subject to change. As we said in 2000, it was worthless. About nine months ago, it would have been worth about $20 billion according to this estimate. So that's a fairly significant variation.

If it is decided that the best course of action is to sell the material, we found that there are potential buyers. As always, however, there are complications. Potentially, the material could be sold as is or re-enriched and then sold. However, with respect to the first option, we have concluded that under terms of the USEC Privatization Act, DOE does not have the authority to sell the tails as is.

Accordingly, to make this option possible and provide legal clarity for all stakeholders involved, we recommend that the Congress amend the USEC Privatization Act or other legislation to provide explicit direction about the conditions DOE must follow to sell or transfer the tails in their current form.

On the other hand, DOE does have current authority to enrich the tails and then sell the re-enriched product. However, here too there is an important complication, namely the limited spare enrichment capacity in the U.S. As we sit here today, USEC is the only enrichment operation in the U.S., and it appears USEC has the capacity to only enrich perhaps 14 percent of the most valuable tails before its planned closure in 2012.

While USEC and at least two other companies are planning to build new enrichment capacity using much more efficient enrichment technology, it would be years before this capacity is online. Navigating the complexities and complications associated with obtaining value from the tails in DOE's stockpile and taking advantage of the opportunities of today's high uranium prices will require a well thought-out strategy and a detailed plan. However, while DOE has been working on such a uranium disposition plan since 2005, it has not advanced past a statement of general principles enunciated in the Secretary's March 2008 policy statement.

As we recommended in our report issued Monday, DOE should put together a comprehensive uranium assessment and disposition plan that, at a minimum, lays out the policy priorities for the uranium in its inventory, preferred sales, re-enrichment and storage options for each type of uranium in the inventory, the department's legal authority to implement the options, and analysis of the impact of the options on the domestic uranium industry and details on how implementation of these options should change in the event uranium market conditions change. Such a detailed plan is needed to maximize the chances that taxpayer and national interests in the suddenly valuable depleted uranium stockpile are maximized.

Because uranium prices are volatile, this plan should be prepared as soon as possible. Based on our most recent conversations with DOE staff, DOE may have a slightly different take on both its authority and the need for the specific strategy we are calling for. So we look forward to discussing these issues further today. Thank you very much.

[The prepared statement of Mr. Robinson follows:]

United States Government Accountability Office

GAO

Testimony

Before the Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, House of Representatives

For Release on Delivery
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NUCLEAR MATERIAL

Several Potential Options for Dealing with DOE's Depleted Uranium Tails Could Benefit the Government

Statement of Robert A. Robinson, Managing Director
Natural Resources and Environment

GAO-08-613T

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Highlights

Highlights of GAO-08-613T, a testimony before the Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, House of Representatives

April 3, 2008

NUCLEAR MATERIAL

Several Potential Options for Dealing with DOE's Depleted Uranium Tails Could Benefit the Government

Why GAO Did This Study

Since the 1940s, the Department of Energy (DOE) has been processing natural uranium into enriched uranium, which has a higher concentration of the isotope uranium-235 that can be used in nuclear weapons or reactors. This has resulted in over 700,000 metric tons of leftover depleted uranium, also known as "tails," that have varying residual concentrations uranium-235. The tails are stored at DOE's uranium enrichment plants in Portsmouth, Ohio and Paducah, Kentucky. Although the tails have historically been considered a waste product and an environmental liability, recently an about tenfold increase in uranium prices may give DOE options to use some of the tails in ways that could provide revenue to the government.

GAO's testimony is based on its March 31, 2008, report entitled *Nuclear Material: DOE Has Several Potential Options for Dealing with Depleted Uranium Tails, Each of Which Could Benefit the Government* (GAO-08-606R). The testimony focuses on (1) DOE's potential options for its tails and (2) the potential value of DOE's tails and factors that affect the value. It also contains an analysis of DOE's legal authority to carry out the potential options.

In its report, GAO recommended that Congress consider clarifying DOE's statutory authority to manage depleted uranium. GAO also recommended that DOE complete a comprehensive uranium management assessment as soon as possible.

To view the full product, including the scope and methodology, click on GAO-08-613T. For more information, contact Robert A. Robinson at (202) 512-3841 or robinsonr@gao.gov.

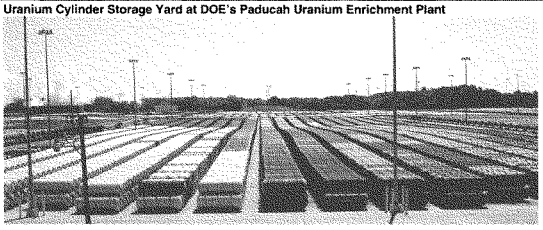
What GAO Found

DOE's potential options for its tails include selling the tails "as is," re-enriching the tails, or storing them indefinitely. DOE's current legal authority to sell its depleted uranium inventory "as is" is doubtful, but DOE generally has authority to carry out the other options. The department has not finished a comprehensive assessment of these options and is still evaluating the details of how such options might be implemented.

- *DOE's authority to sell the tails in their current unprocessed form is doubtful.* Because of specific statutory language in 1996 legislation governing DOE's disposition of its uranium, we believe that DOE's authority to sell the tails in unprocessed form is doubtful and that, under rules of statutory construction, DOE likely lacks such authority. However, if Congress were to provide the department with the needed authority, firms such as nuclear power utilities and enrichment companies may be interested in purchasing these tails and re-enriching them as a source of nuclear fuel.
- *DOE could contract to re-enrich the tails.* Although DOE would have to pay for re-enrichment, it might obtain more value from selling the re-enriched uranium instead of the tails if its re-enrichment costs were less than the discount it would have to offer to sell the tails as is.
- *DOE could store the tails indefinitely.* While this option conforms to an existing DOE plan to convert tails into a more stable form for long term storage, storing the tails indefinitely could prevent DOE from obtaining the potentially large revenue resulting from sales at currently high uranium prices.

The potential value of DOE's depleted uranium tails is currently substantial, but changing market conditions could greatly affect the tails' value over time. Based on February 2008 uranium prices and enrichment costs and assuming sufficient re-enrichment capacity is available, GAO estimates the value of DOE's tails at $7.6 billion. However, this estimate is very sensitive to changing uranium prices, which recently have been extremely volatile, as well as to the availability of enrichment capacity.

Uranium Cylinder Storage Yard at DOE's Paducah Uranium Enrichment Plant



Source: DOE.

Mr. Chairman and Members of the Subcommittee:

Thank you for the opportunity to discuss our work on the Department of Energy's (DOE) inventory of depleted uranium as you consider options for using this inventory in ways that could benefit the U.S. government. As you know, since the 1940s the government has been processing natural uranium into enriched uranium. This increases the concentration of the isotope uranium-235 necessary to make the material useful in nuclear weapons or reactors. The generation of enriched uranium over many decades has resulted in approximately 700,000 metric tons of leftover depleted uranium, also known as "tails," that have varying residual concentrations of uranium-235 remaining. DOE stores these tails at its uranium enrichment plants in Portsmouth, Ohio, and Paducah, Kentucky. DOE is faced with assessing its options to best manage this large accumulation of tails. Although the tails have historically been considered a waste product and an environmental liability, an about tenfold increase in uranium prices in recent years may give DOE options to use that portion of the tails with the higher residual concentrations of uranium-235 in ways that could provide revenue to the government.

My testimony today, which is based on our March 31, 2008, report to the House Committee on Energy and Commerce and the Senate Committee on Energy and Natural Resources,[1] discusses (1) DOE's potential options for beneficially reusing or indefinitely storing its tails and (2) the potential value of DOE's tails and factors that affect the value.

To address these objectives, we reviewed a draft uranium sales strategy that DOE has been developing since 2005, as well as a March 2008 DOE policy statement outlining how the department intends to manage its inventory of uranium—including depleted, natural, and enriched uranium. As part of our evaluation of DOE's potential options, we reviewed relevant statutes and regulations, court decisions, and other legal documents. We also requested DOE's position on its legal authority to implement options for its tails, but DOE declined to provide its position. Appendix I contains our analysis of DOE's legal authority to sell or transfer the tails in their current form, as well as to re-enrich and sell the tails and to store the tails indefinitely. In addition to this legal analysis, we interviewed officials from

[1]GAO, *Nuclear Material: DOE Has Several Potential Options for Dealing with Depleted Uranium Tails, Each of Which Could Benefit the Government*, GAO-08-606R (Washington, D.C.: Mar. 31, 2008).

DOE's Office of Nuclear Energy, which is developing the strategy, and DOE's Office of Environmental Management, which is in charge of the day-to-day management of DOE's uranium inventories stored at Paducah and Portsmouth. We also visited DOE's Portsmouth and Paducah Project Office in Lexington, Kentucky, to discuss depleted uranium management issues with DOE officials. In addition, we interviewed officials from 10 U.S. nuclear power utilities, enrichment services companies such as USEC, and others in the nuclear industry regarding their commercial interests in the tails. To estimate the potential value of DOE's tails, we developed a model using standard formulas for the amounts of enriched uranium and tails produced from given quantities of uranium and enrichment services. We obtained data from DOE on the quantities and uranium-235 concentrations of tails in the department's inventory. The model also used uranium price data obtained from nuclear industry trade publications. These data are commonly used in the nuclear industry as standard measures of the market price for uranium; we determined that the data were sufficiently reliable for our purposes.

We conducted our work from July 2007 to March 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

In summary, we found the following:

DOE's potential options for its tails include selling the tails "as is," re-enriching the tails, or storing them indefinitely. However, DOE's current legal authority to sell its depleted uranium inventory in its current unprocessed form is doubtful, and under rules of statutory construction, DOE likely lacks such authority. We found that DOE generally has authority to carry out the re-enrichment and storage options. The department has not finished a comprehensive assessment of these options and is still evaluating the details of how such options might be implemented.

- *DOE's authority to sell the tails in their current unprocessed form is doubtful.* Because of specific statutory language in 1996 legislation governing DOE's disposition of its uranium, we believe that DOE's authority to sell the unprocessed tails is doubtful. DOE may only sell or transfer uranium in a manner consistent with the provisions of the statute.

While the statute authorizes and regulates DOE's sale or transfer of a number of types of uranium, it does not specify conditions for the sale or transfer of depleted uranium tails. Therefore, under rules of statutory construction, DOE likely lacks such authority. However, if Congress were to provide the department with the needed authority, firms such as nuclear power utilities and enrichment companies may be interested in purchasing these tails and re-enriching them as a source of nuclear fuel. Industry officials told us that buyers would discount, perhaps steeply, their offered prices to make buying tails attractive compared with purchasing natural uranium on the open market. That is, DOE might get a discounted price for the tails to compensate buyers for additional risks, such as rising enrichment costs or buyers' inability to obtain sufficient enrichment services.

- *DOE could contract to re-enrich the tails.* Although DOE's authority to sell the unprocessed tails is doubtful, no such general legal impediment exists for the department to itself contract to re-enrich the tails and sell the resulting uranium. Although DOE would have to pay for re-enrichment, it could be better off selling the re-enriched uranium instead of the unprocessed tails if its re-enrichment costs were less than the discount it would have to offer to compensate a buyer for the risks associated with arranging for re-enrichment.

- *DOE could store the tails indefinitely.* DOE also has the general legal option to store the tails indefinitely. While this option conforms to an existing DOE plan to convert tails into a more stable form for long-term storage, storing the tails indefinitely could prevent DOE from obtaining the potentially large revenue resulting from sales at currently high uranium prices. It would also continue to incur associated storage and maintenance costs that currently amount to about $4 million per year. Moreover, after converting the tails to a more stable form, DOE would incur higher costs to re-enrich the tails if it decided later to pursue such an approach. This is because DOE would have to chemically reconvert the tails to the uranium compound required for re-enrichment.

DOE has not completed a comprehensive assessment to decide among its sales, re-enrichment, or storage options. The department has been developing a uranium management plan since 2005 and issued a March 2008 policy statement that established a general framework for how DOE plans to manage its uranium inventories. However, the policy statement is not a comprehensive assessment of the options for DOE's tails. For example, the policy statement does not discuss whether it would be more advantageous to sell the higher-concentration tails as is (if authorized) or

to re-enrich them, and it does not contain details on when any potential sales or re-enrichment may occur.

The potential value of DOE's depleted uranium tails is currently substantial, but changing market conditions could greatly affect the tails' value over time. Based on February 2008 uranium prices and enrichment costs and assuming sufficient re-enrichment capacity was available, we estimate DOE's tails to have a net value of $7.6 billion. This estimate is very sensitive to changing uranium prices, which recently have been extremely volatile, as well as to the availability of enrichment capacity. For example, using the lowest and highest uranium prices over the past 8 years, our model shows the value of DOE tails could range from almost nothing to more than $20 billion. In addition, excess re-enrichment capacity currently is very limited, and the amount of available re-enrichment capacity for tails over the next decade is uncertain. Accordingly, the actual amount of revenue that DOE could obtain from the tails could be much higher or lower than our $7.6 billion estimate, depending upon uranium prices at the time the material is marketed and the department's ability to obtain sufficient enrichment services, as well as the price of those services.

We recommended that Congress consider clarifying DOE's statutory authority to manage depleted uranium, including explicit direction about whether and how DOE may sell the tails in their current form. Depending on the terms of such legislation, this could reap significant benefits for the government because of the potentially large amount of revenue that could be obtained. In any event, enacting explicit provisions regarding DOE's disposition of depleted uranium would provide stakeholders with welcome legal clarity and could help avoid litigation that would interrupt DOE's efforts to obtain maximum value for its tails. We also recommended that DOE complete a comprehensive uranium management assessment as soon as possible to best take advantage of recent increases in uranium prices.

In its review of our report, DOE did not comment either on our finding that DOE's legal authority to sell or transfer depleted uranium in its current form is doubtful or on our recommendation that Congress consider clarifying DOE's statutory authority to manage depleted uranium. Although DOE officials did not agree or disagree with our recommendation that the department complete a comprehensive uranium management assessment as soon as possible, they did request that we clarify the recommendation to more explicitly outline what the assessment should contain. We agreed and modified the report accordingly.

Background

Since the 1940s, one mission of DOE and its predecessor agencies has been processing uranium as a source of nuclear material for defense and commercial purposes. A key step in this process is the enrichment of natural uranium, which increases its concentration of uranium-235, the isotope of uranium that undergoes fission to release enormous amounts of energy. Before it can be enriched, natural uranium must be chemically converted into uranium hexafluoride. The enrichment process results in two principal products: (1) enriched uranium hexafluoride, which can be further processed for specific uses, such as nuclear weapons or fuel for nuclear power plants; and (2) leftover "tails" of uranium hexafluoride. These tails are also known as depleted uranium because the material is depleted in uranium-235 compared with natural uranium.[2]

Since 1993, uranium enrichment activities at DOE-owned uranium enrichment plants have been performed by USEC, formerly a wholly owned government corporation that was privatized in 1998. However, DOE still maintains over 700,000 metric tons of depleted uranium tails in about 63,000 metal cylinders in storage yards at its Paducah, Kentucky, and Portsmouth, Ohio, enrichment plants. It must safely maintain these cylinders because the tails are dangerous to human health and the environment. Uranium hexafluoride is radioactive and forms extremely corrosive and potentially lethal compounds if it contacts water. In addition, DOE also maintains large inventories of natural and enriched uranium that are also surplus to the department's needs.

Tails have historically been considered a waste product because considerable enrichment processing is required to further extract the remaining useful quantities of uranium-235. In the past, low uranium prices meant that these enrichment services would cost more than the relatively small amount of uranium-235 extracted would be worth. However, an approximately tenfold increase in uranium prices—from approximately $21 per kilogram of uranium in the form of uranium

[2]Uranium is categorized by concentration of uranium-235, expressed as a percentage "assay." Natural uranium has an assay of about 0.7 percent uranium-235. For use in a nuclear reactor or weapon, natural uranium must be enriched to increase its assay to a level required for its ultimate use. For example, low enriched uranium (LEU), which is used in commercial nuclear power reactors, typically has an assay of between 3 and 5 percent uranium-235. Highly enriched uranium (HEU), which is used in nuclear weapons, has an assay of greater than 20 percent uranium-235 and can have an assay of greater than 90 percent. The depleted uranium tails also have varying assays below the 0.7 percent assay of natural uranium. The assay of DOE's tails range from less than 0.15 to about 0.66 percent uranium-235.

hexafluoride in November 2000 to about $200 per kilogram in February 2008—has potentially made it profitable to re-enrich some tails to further extract uranium-235. Even with the current higher uranium prices, however, only DOE's tails with higher concentrations of uranium-235 (at least 0.3 percent) could be profitably re-enriched, according to industry officials. About one-third of DOE's tails contain uranium-235 concentrations at that level or higher.

DOE Has Options for the Tails but Has Not Finished a Comprehensive Assessment of Them

DOE's potential options for its tails include selling the tails "as is," re-enriching them, or storing them indefinitely. However, DOE's legal authority to sell the tails in their current form is doubtful. Although we found that DOE generally has authority to carry out the re-enrichment and storage options, the department has not finished a comprehensive assessment of these options, and it is still evaluating the details of how such options might be implemented.

DOE's Legal Authority to Sell the Tails in Their Current Form Is Doubtful

While selling the tails in their current unprocessed form is a potential option, we believe that DOE's authority to conduct such sales is doubtful because of specific statutory language in 1996 legislation governing DOE's disposition of its uranium. Appendix I contains our analysis of DOE's authority to sell or transfer its depleted uranium in its current form, as well as to re-enrich and sell the tails, and to store the tails indefinitely. As our analysis explains, in 1996, Congress enacted section 3112 of the USEC Privatization Act,[3] which limits DOE's general authority, under the Atomic Energy Act[4] or otherwise, to sell or transfer uranium. In particular, section 3112 explicitly bars DOE from selling or transferring "any uranium"—including but not specifically limited to certain forms of natural and enriched uranium—"except as consistent with this section." Section 3112 then specifies conditions for DOE's sale or transfer of natural and enriched uranium of various types, including conditions in section 3112(d) for sale of natural and low-enriched uranium from DOE's inventory. To ensure the domestic uranium market is not flooded with large amounts of government material, in section 3112(d), Congress required DOE to determine that any such inventory sales will not have a material adverse impact on the domestic uranium industry. Congress also required in

[3]USEC Privatization Act, Pub. L. No. 104-134, § 3112, 110 Stat. 1321-344, 42 U.S.C. § 2297h-10.

[4]Atomic Energy Act of 1954, as amended, 42 U.S.C. §§ 2011 *et seq.*

section 3112(d) that DOE determine it will receive adequate payment—at least "fair market value"—if it sells this uranium and that DOE obtain a determination from the President that such materials are not necessary for national security.

Nowhere, however, does section 3112(d) or any other provision of section 3112 explicitly provide conditions for DOE to transfer or sell depleted uranium. Because section 3112(a) states that DOE may not "transfer or sell any uranium . . . except as consistent with this section," and because no other part of section 3112 sets out the conditions for DOE to transfer or sell depleted uranium, we believe that under rules of statutory construction, DOE likely lacks authority to sell the tails. While courts have not addressed this question before and thus the outcome is not free from doubt, this interpretation applies the plain language of the statute. It also respects the policy considerations and choices Congress made in 1996 when presented with the disposition of DOE's valuable uranium in a crowded and price-sensitive market. Finally, this reading of DOE's authority is consistent with how courts address changes in circumstances after a law is passed: Statutes written in comprehensive terms apply to unanticipated circumstances if the new circumstances reasonably fall within the scope of the plain language. Thus, under the current terms of section 3112, DOE's sale of its tails would be covered by the statute's general prohibition on sale of uranium, even if tails were not part of the universe Congress explicitly had in mind when it enacted the statute in 1996.

Should Congress grant DOE the needed legal authority by amending the USEC Privatization Act or through other legislation, firms such as nuclear power utilities and enrichment companies would be interested in purchasing at least that portion of the tails with higher concentrations of extractable uranium-235 as a valuable source for nuclear fuel. Officials from 8 of 10 U.S. nuclear utilities indicated tentative interest in such a purchase. Individual utilities were often interested in limited quantities of DOE's tails because they were concerned about depending upon a single source to fulfill all of their requirements. Multiple utilities acting together as a consortium could mitigate these concerns and purchase larger quantities of tails. Some enrichment firms also told us of some interest in purchasing portions of the inventory, but their anticipated excess enrichment capacity to process the tails into a marketable form affected both the quantity of tails they would purchase and the timing of any purchase.

Potential buyers suggested various commercial arrangements, including purchasing the tails through a competitive sale, such as an auction, or through negotiations with DOE. However, industry officials told us that buyers would discount, perhaps steeply, their offered prices to make buying tails attractive compared with purchasing natural uranium on the open market. That is, DOE might get a discounted price for the tails to compensate buyers for additional risks, such as rising enrichment costs or buyers' inability to obtain sufficient enrichment services. In addition, potential buyers noted that any purchase would depend upon confirming certain information, such as that the tails were free of contaminants that could cause nuclear fuel production problems and that the cylinders containing the tails—some of which are 50 years old and may not meet transportation standards—could be safely shipped.

DOE Could Re-enrich Its Tails

Although DOE's legal authority to sell the tails in their current form is doubtful, DOE has the general legal option, as discussed in appendix I, of re-enriching the tails and then selling the resulting natural or enriched uranium. DOE would have to contract for enrichment services commercially because the department no longer operates enrichment facilities itself. Furthermore, DOE would have to find a company with excess enrichment capacity beyond its current operations, which may be particularly difficult if large amounts of enrichment processing were required. Within the United States today, for example, the only operating enrichment facility is DOE's USEC-run Paducah, Kentucky, plant, and almost all of its enrichment capacity is already being used through 2012, when the facility may stop operating. USEC and at least two other companies are also constructing or planning to construct new enrichment facilities in the United States that potentially could be used to re-enrich DOE's tails.

Although DOE would have to pay for re-enrichment, it might obtain more value from selling the re-enriched uranium instead of the tails if its re-enrichment costs were less than the discount it would have to offer to sell the tails as is. Enrichment firms with whom we spoke told us they would be interested in re-enriching the tails for a fee. The quantity of tails they would re-enrich annually would depend on the available excess enrichment capacity at their facilities.

Additionally, as noted above, prior to selling any natural or enriched uranium that results from re-enriching tails, DOE would be required under section 3112(d) of the USEC Privatization Act to determine that sale of the material would not have a material adverse impact on the domestic

uranium industry and that the price paid to DOE would provide at least fair market value. Section 3112(d) also would require DOE to obtain the President's determination that the material is not needed for national security.

DOE Could Store the Tails

DOE also has the general legal option, as discussed in appendix I, to store the tails indefinitely. In the late 1990s, when relatively low uranium prices meant that tails were viewed as waste, DOE developed a plan for the safe, long-term storage of the material. DOE is constructing two new facilities to chemically convert its tails into a more stable and safer uranium compound that is suitable for long-term storage. DOE estimates that after the conversion facilities begin operating in 2009, it will take approximately 25 years to convert its existing tails inventory.

Storing the tails indefinitely could prevent DOE from taking advantage of the large increase in uranium prices to obtain potentially large amounts of revenue from material that was once viewed as waste. DOE would also continue to incur costs associated with storing and maintaining the cylinders containing the tails. These costs amount to about $4 million annually. Sale (if authorized) or re-enrichment of some of DOE's tails could also reduce the amount of tails that would need to be converted and, thereby, save DOE some conversion costs.

Moreover, once the tails were converted into a more stable form of uranium oxide, DOE's costs to re-enrich the tails would be higher if it later decided to pursue this approach. This is because of the cost of converting the uranium oxide back to uranium hexafluoride, a step that would be required for re-enrichment. However, according to DOE officials, after the conversion plants begin to operate, the plants will first convert the lower concentration tails because they most likely will not be economically worthwhile to re-enrich. This would give DOE additional time to sell or re-enrich the more valuable higher-concentration tails.

DOE Has Not Completed a Comprehensive Assessment of Options for Its Tails

DOE has been developing a plan since 2005 to sell excess uranium from across its inventories of depleted, natural, and enriched uranium to generate revenues for the U.S. Treasury. In March 2008, DOE issued a policy statement that established a general framework for how DOE plans to manage its uranium inventories. One feature of this policy statement is the establishment of an annual cap on total uranium sales from all of DOE's inventories. The cap is designed to minimize a material adverse impact on domestic uranium producing companies that could result from

DOE depressing uranium prices by selling large amounts of uranium. Thus, under this policy, the maximum amount of tails that DOE would sell annually will depend on the amount of planned sales from its other uranium inventories. In addition, because most uranium to be used as fuel for U.S. nuclear power plants comes from foreign sources, DOE may also choose to retain, rather than sell, some of its uranium as a reserve stockpile to be used in case of a significant disruption in world supplies.

However, the March 2008 policy statement is not a comprehensive assessment of the sales, re-enrichment, or storage options for DOE's tails. The policy statement lacks specific information on the types and quantities of uranium that the department has in its inventory. Furthermore, the policy statement does not discuss whether it would be more advantageous to sell the higher-concentration tails as is (if authorized) or to re-enrich them. It also does not contain details on when any sales or re-enrichment may occur or DOE's legal authority to carry out those options under section 3112 of the USEC Privatization Act. It also lacks information on the uranium market conditions that would influence any DOE decision to potentially sell or re-enrich tails. Further, it does not analyze the impact of such a decision on the domestic uranium industry, and it does not provide guidance on how a decision should be altered in the event that market conditions change. Although the policy statement states that DOE will identify categories of tails that have the greatest potential market value and that the department will conduct cost-benefit analyses to determine what circumstances would justify re-enriching and/or selling potentially valuable tails, it does not have specific milestones for doing so. Instead, the policy statement states that this effort will occur "in the near future."

DOE's Depleted Uranium Inventory Is Potentially Worth Billions of Dollars, but Many Factors Could Greatly Change Its Value

At current uranium prices, we estimate DOE's tails to have a net value of $7.6 billion; however, we would like to emphasize that this estimate is very sensitive to changing uranium prices, which recently have been extremely volatile, as well as to the availability of enrichment capacity. This estimate assumes the February 2008 published uranium price of $200 per kilogram of natural uranium in the form of uranium hexafluoride and $145 per separative work unit—the standard measure of uranium enrichment services. Our model also assumes the capacity to re-enrich the higher-concentration tails and subtracts the costs of the needed enrichment services. It also takes into account the cost savings DOE would realize from reductions in the amount of tails that needed conversion to a more stable form for storage, as well as the costs to convert any residual tails.

As noted above, this estimate is very sensitive to price variations for uranium as well as to the availability of enrichment services. Uranium prices are very volatile, and a sharp rise or fall in prices could greatly affect the value of the tails. For example, since 2000, uranium prices have varied from a low of about $21 per kilogram in November 2000 to a high of about $360 per kilogram in mid-2007, before falling to their recent level of about $200 per kilogram. Substituting the high and low end of historical uranium prices over the past 8 years for current prices results in a range of values for the tails from being nearly worthless, assuming $21 per kilogram of uranium, to over $20 billion, assuming $360 per kilogram of uranium. There is no consensus among industry players whether uranium prices will fall or rise in the future or on the magnitude of any future price changes. Furthermore, the introduction of additional uranium onto the market by the sale of large quantities of DOE depleted, natural, or enriched uranium—assuming DOE obtains authority to sell depleted uranium—could also lead to lower uranium prices. Therefore, according to DOE officials, DOE's uranium sales strategy, when completed, will likely call for limits on the quantity of uranium the department would sell annually to help achieve DOE's goal of minimizing the negative effects on domestic uranium producers. However, this would lengthen the time necessary to market DOE's uranium, increasing the time the department is exposed to uranium price volatility. These factors all result in great uncertainty of the valuation of DOE's tails.

In addition, the enrichment capacity available for re-enriching tails may be limited, and the costs of these enrichment services are uncertain. For example, USEC currently only has a small amount of excess enrichment capacity at its Paducah plant. If it used the spare capacity, USEC would only be able to re-enrich about 14 percent of DOE's most economically attractive tails between now and the possible closing of the plant in 2012. Although USEC officials told us the company was willing to explore options to extend the Paducah plant's operations beyond 2012 and dedicate Paducah's capacity solely to re-enriching DOE's tails after this point, negotiations between the company and DOE would be needed to determine the enrichment costs that would be paid by DOE. The Paducah plant uses a technology developed in the 1940s that results in relatively high production costs. Even if the Paducah plant were to be dedicated entirely to re-enriching DOE tails after 2012, over a decade would be required to complete the work because of limitations on the annual volume of tails that can be physically processed by the plant. This lengthy period of time would expose DOE to risks of uranium price fluctuations and increasing maintenance costs.

USEC and other companies are constructing or planning to construct enrichment plants in the United States that utilize newer, lower-cost technology. However, these facilities are not expected to be completed until various times over the next decade. It is unclear exactly when these facilities will be fully operating, the extent to which they will have excess enrichment capacity to re-enrich DOE's tails, and what enrichment costs DOE could expect to pay. For example, the size of the fee DOE may have to pay an enrichment company to re-enrich its tails would be subject to negotiation between DOE and the company.

Conclusions

Recent dramatic increases in uranium prices present the U.S. government with an opportunity to gain some benefit from material that was once considered a liability. Under current law, however, one potential avenue for dealing with DOE's depleted uranium tails—sale of the material in its current form—is likely closed to the department. Obtaining legal authority from Congress to sell depleted uranium under USEC Privatization Act section 3112 or other legislation would provide the department with an additional option in determining the best course of action to obtain the maximum financial benefit from its tails. We therefore recommended that Congress consider clarifying DOE's statutory authority to manage depleted uranium, under the USEC Privatization Act or other legislation, including explicit direction about whether and how DOE may sell or transfer the tails. Depending on the terms of such legislation, this could reap significant benefits for the government because of the potentially large amount of revenue that could be obtained. In any event, enacting explicit provisions regarding DOE's disposition of depleted uranium would provide stakeholders with welcome legal clarity and help avoid litigation that could interrupt DOE's efforts to obtain maximum value for the tails.

Unfortunately, DOE has not completed a comprehensive assessment of its options with sufficient speed to take advantage of current market conditions. Despite working since 2005 to develop a plan for its uranium inventories, DOE's March 2008 policy statement on the management of its excess uranium inventories lacks detailed information on the types and amounts of uranium that the department plans to potentially sell, further enrich, or store. Although pledging to conduct appropriate cost-benefit analyses as well as analyses on the impact of any proposal on the domestic uranium industry, the policy statement lacks specific milestones for doing so. Because of the potentially significant amounts of revenue that could be obtained from DOE's uranium inventories and the extreme volatility of the uranium market, we recommended that the department complete, as soon as possible, a comprehensive uranium management assessment that

details DOE's options, its authority to implement these options, and the impact of these options on the domestic uranium industry. Without such an assessment that contains detailed information on each of its options, DOE will be unable to quickly react to rapidly changing market conditions to achieve the greatest possible value from its uranium inventories.

Mr. Chairman, this completes my prepared statement. I would be happy to respond to any questions that you or other Members of the Subcommittee may have at this time.

GAO Contact and Staff Acknowledgments

If you have any questions or need additional information, please contact Robert A. Robinson at (202) 512-3841 or robinsonr@gao.gov. Major contributors to this statement were Ryan T. Coles (Assistant Director), Ellen Chu, Terry Hanford, Karen Keegan, Omari Norman, Susan Sawtelle, and Franklyn Yao.

Appendix I: GAO's Legal Analysis of DOE's Current Authority to Manage Depleted Uranium

Introduction and Summary of Conclusions

As part of the Government Accountability Office's review of the Department of Energy's (DOE) potential options for managing its inventory of excess depleted uranium (also known as "tails"), we examined DOE's legal authority to implement three basic options: (1) re-enriching the tails and then selling or transferring them, (2) storing the un-enriched tails indefinitely, and (3) selling or transferring the inventory of tails "as is."

We conclude that DOE has general authority under the Atomic Energy Act to carry out the first and second options—to re-enrich and then sell or transfer the tails, as well as to store them indefinitely. However, we believe that because of constraints on DOE's Atomic Energy Act authority in the USEC Privatization Act, the department's authority to carry out the third option—to sell or transfer the tails in their current form—is doubtful. We believe that under rules of statutory construction, DOE likely lacks such authority under current law.

Because this is an issue of first impression, and because the question could significantly affect the public interest and DOE's development of a comprehensive strategy for its excess-uranium inventory, we recommend that Congress consider enacting legislation clarifying the conditions (if any) under which DOE may sell or transfer its depleted uranium. Depending on the terms of such legislation, this could reap benefits for the government because of the potentially significant revenue that could be obtained. In any event, such clarification would provide stakeholders with

welcome legal clarity, potentially enhance the attractiveness to interested purchasers, and help avoid litigation that could interrupt DOE's efforts to obtain maximum value for the public.[1]

Analysis[2]

A. DOE authority to re-enrich and sell or transfer the tails

DOE has general authority under the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2011 et seq. (AEA), to re-enrich its depleted uranium inventory to natural or low-enriched levels and then to sell or transfer the re-enriched product. First, AEA section 41, 42 U.S.C. § 2061, authorizes DOE to re-enrich depleted uranium to low-enriched levels, and AEA

[1]We also examined whether DOE is authorized to sell or transfer its depleted uranium tails under section 314 of the 2006 Energy and Water Development Appropriations Act, Pub. L. No. 109-103, 119 Stat. 2247, 2281 (Nov. 19, 2005), a position advanced to us by USEC. That provision states in part: "SALES OF URANIUM.—(a) IN GENERAL.—Notwithstanding any other provision of Federal law, including section 3112 of the USEC Privatization Act . . . and section 3302 of title 31, United States Code, [DOE] is authorized to barter, transfer or sell uranium (including natural uranium concentrates, natural uranium hexafluoride, or in any form or assay) and to use any proceeds, without fiscal year limitation, to remediate uranium inventories held by [DOE]."

Without expressing a view on whether these terms might otherwise authorize DOE's sale of its uranium inventories, we conclude that this provision is not permanent legislation and thus not a continuing source of authority, as USEC has suggested. DOE officials told us they agree with this conclusion. Generally, provisions of an annual appropriations act are considered temporary unless Congress indicates otherwise. B-309704, Aug. 28, 2007. The question is whether section 314 contains words of futurity indicating that Congress intended the provision to be permanent. It does not. The language "notwithstanding any other provision of law" refers to other provisions of law in effect during the fiscal year covered by the appropriations act. The language "without fiscal year limitation" authorizes DOE to obligate without fiscal year limitation any proceeds from uranium sold during the period section 314 was in effect. Because section 314 contained no words of futurity, it is no longer in effect. Thus, whatever the scope of authority in section 314, it does not authorize future DOE sales or transfers.

[2]GAO's practice when rendering legal opinions regarding agency-related matters is to solicit the agency's position on the subject matter of the request. GAO, *Procedures and Practices for Legal Decisions and Opinions*, GAO-06-1064SP (Washington, D.C.: Sept. 5, 2006), available at http://www.gao.gov/legal/cgdecisions-faq.html (last visited March 20, 2008). We requested DOE's position on its authority to manage depleted uranium under the Atomic Energy Act and the USEC Privatization Act, as well as any related documents. Letters from Susan D. Sawtelle, GAO Managing Associate General Counsel, to David R. Hill, DOE General Counsel, December 10, 2007, and to Eric J. Fygi, DOE Deputy General Counsel, January 11, 2008. DOE declined to provide its position on these issues. Letter from Eric J. Fygi to Susan D. Sawtelle, December 21, 2007. The department subsequently provided certain documents, Letter from Eric J. Fygi to Susan D. Sawtelle, January 25, 2008, but later told us these did not necessarily reflect the department's legal position.

sections 63 and 66, 42 U.S.C. §§ 2093, 2096—which authorize DOE's acquisition and distribution of source material—implicitly authorize DOE to re-enrich depleted uranium to natural levels. Second, AEA sections 53, 63, and 161m, 42 U.S.C. §§ 2073, 2093, 2201(m), authorize DOE to transfer this re-enriched uranium, subject to certain conditions, to appropriately licensed entities such as nuclear power reactor operators.

This general AEA authority is limited by any applicable restrictions in the USEC Privatization Act, enacted in 1996. Section 3112(a) of the act, 42 U.S.C. §§ 2297h-10(a), prohibits DOE from transferring or selling "any uranium (including natural uranium concentrates, natural uranium hexafluoride, or enriched uranium in any form) . . . except as consistent with this section." The remaining provisions of section 3112 then specify the conditions under which DOE may sell or transfer various types of natural and enriched uranium. Thus, DOE is authorized to sell or transfer re-enriched depleted uranium provided such transactions satisfy the remaining section 3112 conditions.

B. DOE authority to store the un-enriched tails indefinitely

DOE has general authority under the AEA to store its unenriched depleted uranium indefinitely, as well as to convert the tails to a more stable form for storage. We believe this authority is implicit under AEA sections 63 and 66, which, as discussed above, authorize DOE to acquire and distribute source material. This authority is also implicit under AEA section 41, which authorizes DOE to enrich uranium, a process which inevitably generates depleted uranium. In addition, to the extent the department's depleted uranium is "hazardous waste," AEA section 91a(3), 42 U.S.C. § 2121(a)(3), explicitly authorizes DOE to store, process, transport, and dispose of "hazardous waste (including radioactive waste) resulting from nuclear materials production, weapons production and surveillance programs, and naval nuclear propulsion programs."

Again, this AEA authority is limited by any applicable restrictions in the USEC Privatization Act. Section 3112 of that act does not apply to, and thus does not restrict, storage of DOE's uranium. Section 3113, 42 U.S.C. § 2297h-11, does not apply to or restrict storage of its own depleted uranium, but it is relevant in that it reinforces DOE's authority to store this type of uranium under the AEA. Section 3113(a) requires DOE to accept depleted uranium from other entities for storage and disposal in the event the depleted uranium is determined to be "low-level radioactive waste." If the waste generator is a Nuclear Regulatory Commission (NRC) licensee, DOE must take title and possession of the depleted uranium "at an existing

DUF6 [depleted uranium] storage facility." Implicit in these provisions is that DOE may store and dispose of its own depleted uranium waste as well, under its AEA or other authority.

C. DOE authority to sell or transfer the tails in their current form

DOE has general authority under the AEA to sell or transfer depleted uranium in its current form. As noted, sections 63 and 161m authorize DOE to distribute or sell "source material" to appropriately licensed entities, provided certain conditions are met, and depleted uranium is "source material." AEA section 11z, 42 U.S.C. § 2014(z).

Again, this AEA authority is limited by any applicable restrictions in the USEC Privatization Act. While this is an issue of first impression, we believe DOE's authority to sell or transfer depleted uranium in its current form is doubtful. We believe courts applying rules of statutory construction would likely find DOE lacks such authority under current law.

As noted above, section 3112 of the USEC Privatization Act, entitled "Uranium transfers and sales," begins with a broad prohibition:

> "[DOE] shall not . . . transfer or sell *any uranium* (*including* natural uranium concentrates, natural uranium hexafluoride, or enriched uranium in any form) to *any* person *except as consistent with this section*."

(Emphasis added.) The remainder of section 3112 then prescribes the conditions under which DOE may sell or transfer particular types of uranium, namely, so-called Russian-origin uranium (subsection (b)); natural and enriched uranium transferred to USEC (subsection (c)); natural and low-enriched uranium sold from DOE's inventory (subsection (d)); and enriched uranium transferred to federal agencies, state and local agencies, nonprofit, charitable or educational institutions, and others (subsection (e)). No provision explicitly addresses depleted uranium.

Read naturally and in accordance with its plain language, section 3112 prohibits DOE from selling or transferring its depleted uranium. The tails consist of uranium-235 and uranium-238, whether they are deemed a waste or a valuable commodity, and a DOE Office of Environmental Management official confirmed to us that operationally, the department treats depleted,

natural, and enriched uranium all as "uranium." Thus, depleted uranium would be covered by section 3112 as a type of "any uranium."[3] This plain meaning is reinforced by the fact that section 3112(a) lists nonexclusive examples of uranium—"any uranium (including natural uranium . . . or enriched uranium in any form)"—making clear that additional types of uranium are covered by section 3112. A 2005 DOE internal legal memorandum (2005 DOE Memorandum) reaches the same conclusion.[4] Thus, because DOE may sell or transfer uranium only as consistent with the terms of sections 3112(b)-3112(e), and because none of those provisions specifies conditions under which depleted uranium may be sold, the plain words of the statute prohibit it.

The statutory structure and legislative history support this conclusion. It is clear that when Congress passed the USEC Privatization Act in 1996, it was familiar with depleted uranium as a category of uranium requiring management. Because depleted uranium was only considered as a valueless waste at that time, Congress only explicitly referred to one management option in the statute: disposal.[5] As noted, in section 3113, Congress required DOE to take responsibility for disposal of other entities' depleted uranium, should it ever be determined to be a "low-level radioactive waste." As NRC noted recently in making such a determination, however, when depleted uranium is treated as a "resource," rather than a waste, section 3113 does not apply. *See* NRC, *In re Louisiana Energy Services, L.P. (National Enrichment Facility)*, No. CLI-05-05 (Jan. 18, 2005), at 1, 3, 15, 17. In that event—where depleted uranium is a resource to be sold or transferred—section 3112, by its terms, would apply. The fact that Congress did not specify section 3112 conditions under which depleted uranium may be sold, as it did for DOE's other valuable uranium, reflects only that depleted uranium was not

[3]*See, e.g.*, *Walters v. Metropolitan Educational Enterprises, Inc.*, 519 U.S. 202 (1997) (it is a fundamental principle of statutory construction that words in a statute must be given their ordinary or natural meaning whenever possible); *Ali v. Federal Bureau of Prisons*, 128 S. Ct. 831 (U.S. Jan. 22, 2008) ("[R]ead naturally, the word 'any' has an expansive meaning that is, 'one or some indiscriminately of whatever kind.'").

[4]The 2005 DOE Memorandum (which DOE indicated may not represent its legal position) states, "it is relatively clear that [section 3112(a)] is applicable to depleted uranium given that it states 'any uranium.' The examples of types of uranium are merely a listing and should not be interpreted as a limitation to the broader phrase, 'any uranium.'"

[5]*See generally Hearing before the Committee on Energy and Natural Resources on S. 755, a Bill to Amend the Atomic Energy Act of 1954 to Provide for the Privatization of the United States Enrichment Corporation*, S. Hrg. No. 104-105, at 5, 9 (June 13, 1995).

deemed valuable in 1996. It does not reflect congressional intent that valuable depleted uranium is not subject to section 3112's general prohibition against sales of "any uranium." While this result may appear anomalous because depleted uranium is now considered a potentially highly valuable commodity and a potential source of revenue for the federal government, that is a matter for Congress to remedy, if it so chooses.

A recently issued DOE policy on disposition of its excess uranium inventory recognizes this increase in value for depleted uranium.[6] To take advantage of this development, department officials suggested to us that they would be authorized to sell the tails in their current form using DOE's general AEA section 161m authority, without regard to the prohibitions in the USEC Privatization Act. They suggested such an approach might be reconciled as "consistent with" section 3112, as section 3112(a) requires, because none of the provisions in section 3112 specifies conditions of sale for depleted uranium. The 2005 DOE Memorandum makes a similar argument, pointing to the fact that the legislative history contains no explicit mention of restricting DOE's existing AEA authority to sell depleted uranium.[7]

We disagree with this interpretation. DOE in effect reads a depleted uranium exception into the unqualified term "any uranium," and rewrites section 3112 to say that only sale and transfer of uranium categories explicitly identified in that section are restricted. That is not what the statute says, and this reading would violate the principle that statutory exceptions are to be narrowly construed. *See, e.g., Commissioner v. Clark*, 489 U.S. 726, 738-39 (1989) ("Given that Congress has enacted a general rule . . ., we should not eviscerate that legislative judgment through an expansive reading of a somewhat ambiguous exception."). Nor does the legislative history support this result. The fact that there was no mention of limiting DOE's existing depleted uranium sales authority under

[6]*Secretary of Energy's Policy Statement on Management of the Department of Energy's Excess Uranium Inventory*, March 11, 2008, available at http://www.ne.doe.gov/newsroom/2008PRs/nePR031208.html (last visited March 20, 2008) *(2008 DOE Policy Statement)*, at 4.

[7]The *2008 DOE Policy Statement* similarly asserts that DOE has "broad authority" under the AEA to "loan, sell, transfer or otherwise utilize" the department's depleted, natural and enriched uranium inventories, and that "[i]n exercising this authority, the Department must act *consistently* with other relevant statutory provisions, such as section 3112 . . . which imposes limitations on *certain* specified transactions." *Id.* at 1 (emphasis added).

the AEA is unremarkable, because in 1996, there was no valuable depleted uranium to sell.

Finally, it would not be consistent with section 3112 to allow DOE to sell depleted uranium under the AEA. It would violate the statute's prohibition against sales of "any uranium," because there are no section 3112 exceptions under which its sale is permitted. It would also be incongruous to allow DOE to sell or transfer potentially billions of dollars' worth of federal assets without the scrutiny Congress gave to disposition of DOE's valuable uranium in enacting section 3112. Section 3112 represents Congress' more specific and later-enacted intent regarding the types of factors to be considered in selling DOE's uranium inventories, including price, protection of the domestic uranium industry, and safeguarding the national security, and therefore takes precedence. *See, e.g., Smith v. Robinson*, 468 U.S. 992 (1984) (more specific and recent statute takes precedence).[8]

In sum, we believe our reading of section 3112 carries out the plain words of the act and respects the policy considerations and choices Congress made in 1996 when presented with the disposition of DOE's valuable uranium in a crowded and price-sensitive market. Our reading is also consistent with how courts interpret broad statutes when circumstances change: laws written in comprehensive terms apply to unanticipated circumstances if they reasonably fall within the scope of the plain language. *See, e.g., Unexcelled Chemical Corp. v. United States*, 345 U.S. 59 (1953). Thus, depleted uranium sales are covered by the prohibition in section 3112, even if depleted uranium was not part of the universe Congress explicitly had in mind when it enacted the statute in 1996.

The same concerns that led Congress to legislate explicit conditions of sale for DOE's other uranium inventories in 1996 may apply equally with regard to sale of its depleted uranium inventory today. Congress now has the opportunity to address the intervening increase in uranium values and balance the competing concerns associated with its sale. Because the

[8]Section 3112(d) of the USEC Privatization Act authorizes DOE's sale of its natural and low-enriched uranium inventories only if it receives "not . . . less than fair market value," determines that the domestic uranium mining, conversion, and enrichment industry will not suffer adverse material impact from the sale, and obtains a determination by the President that the material is not needed for national security. By contrast, AEA section 161m authorizes sale of DOE's depleted uranium inventory to NRC licensees if there is "reasonable compensation to the government."

question of DOE's authority to sell its depleted tails would be a statutory construction issue of first impression and thus is not free from doubt, and because the question is an issue of significant public interest and importance, we recommend that Congress consider enacting legislation setting forth the explicit conditions (if any) under which DOE may sell or transfer its depleted uranium. Depending on the terms of such legislation, this could reap significant benefits for the government because of the potentially significant revenue that could be obtained. In any event, enacting explicit provisions regarding DOE's sale or transfer of its depleted uranium would provide stakeholders with welcome legal clarity and help avoid litigation that could interrupt DOE's efforts to obtain maximum value for the public.

Conclusion

In summary, we conclude that DOE has general authority under the Atomic Energy Act to re-enrich and then sell or transfer the tails, provided the transaction meets the conditions of section 3112 of the USEC Privatization Act. DOE also has general AEA authority to store the tails indefinitely. However, we believe that because of constraints on DOE's AEA authority in the USEC Privatization Act, the department's authority to sell or transfer tails in their current form is doubtful and that under rules of statutory construction, DOE likely lacks such authority under current law. We recommend that Congress consider enacting legislation explicitly addressing the scope of DOE's authority to sell and transfer depleted uranium.

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Uranium Storage Cylinders at DOE's Paducah Uranium Enrichment Plant

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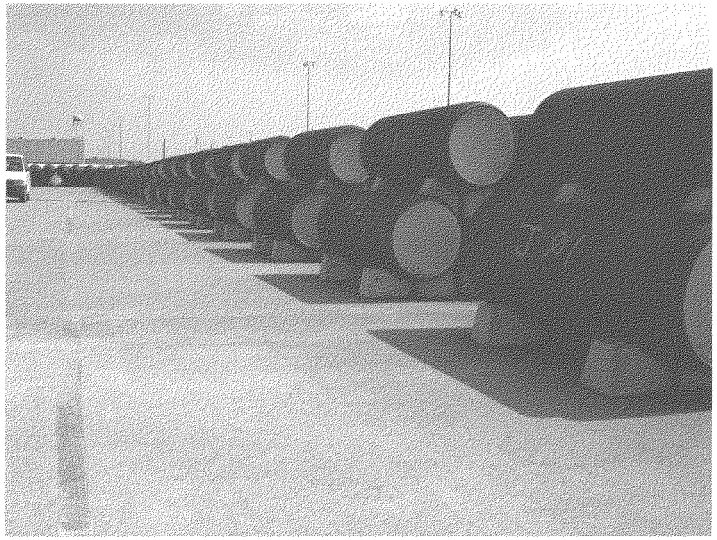
Uranium Storage Cylinders at DOE's Paducah Uranium Enrichment Plant



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Uranium Storage Cylinders at DOE's Paducah Uranium Enrichment Plant

Source: GAO

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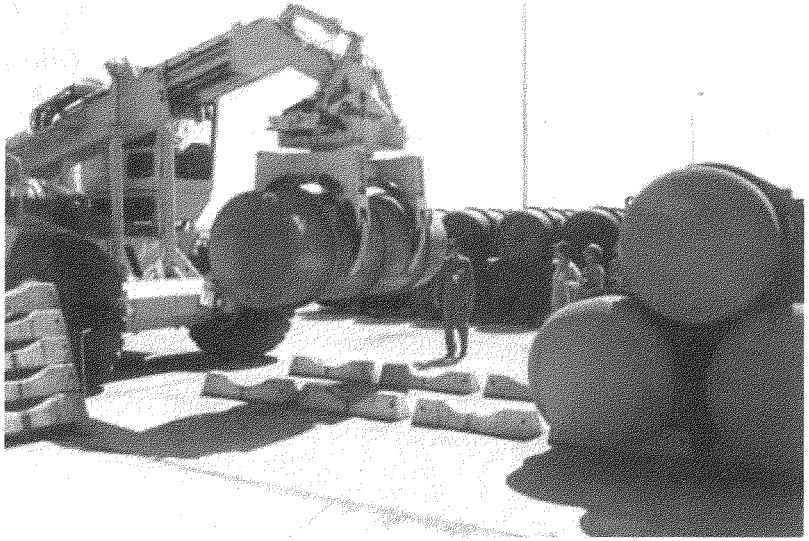
Cylinder Transport Machine at DOE's Paducah Uranium Enrichment Plant



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Uranium Storage Cylinders at DOE's Portsmouth Uranium Enrichment Plant

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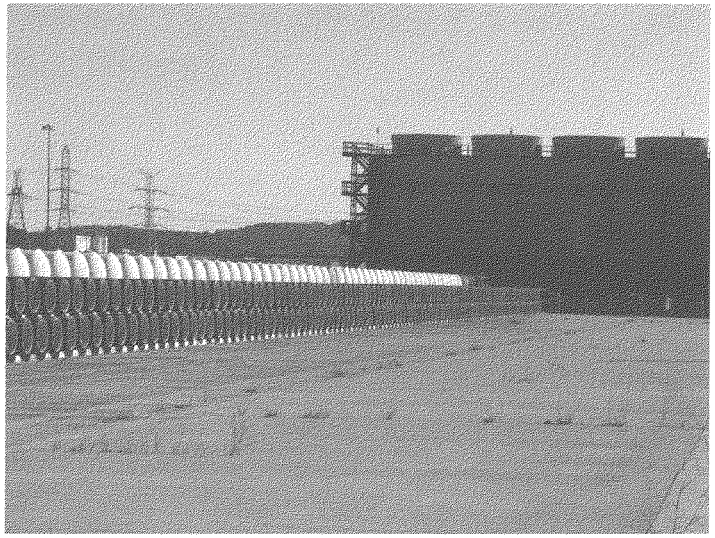
Uranium Storage Cylinders at DOE's Portsmouth Uranium Enrichment Plant



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Mr. STUPAK. Thank you. That concludes all the opening statements. Without objection, we will go to 10-minute round questions to move this along a little quicker. I will begin.

Mr. Spurgeon, if you will. Do you agree that in the short term, DOE has two main choices to derive the value from DOE's high assay tails: contract USEC to re-enrich the tails and reselling the uranium, or auctioning the tails outright? Would you agree with that?

Mr. SPURGEON. I would agree that contracting to enrich and/or selling the tails for the purchaser to then subsequently enrich them and use them are the two major options.

Mr. STUPAK. OK, in your statement, you say that DOE initiated a process to do cost-benefit analysis on whether to re-enrich or sell tails rather than store or dispose of the tails. But DOE's current plan still calls for processing and disposal. Given that uranium prices have been high for over 2 years, can you tell us today whether DOE intends to convert some of the DOE high-assay tails into cash during this administration, or will it wait until the next administration to deal with it?

Mr. SPURGEON. We are proceeding forward with the actions that would be needed in order to be able to implement enrichment. For example, our general counsel had told us that we do need to do environmental assessment of our enriching tails prior to our being——

Mr. STUPAK. So——

Mr. SPURGEON [continuing]. To actually do it. So we are starting the process.

Mr. STUPAK. So it sounds like it will be the next administration before you can——

Mr. SPURGEON. I hope not, sir. Not if I can be able to——

Mr. STUPAK. Well, won't it take about 9 months to do an environmental assessment?

Mr. SPURGEON. We have it underway already, sir.

Mr. STUPAK. OK. So how far into it are you?

Mr. SPURGEON. I signed the authorization to start it, I think, in February. We have a contractor as of March, and we are trying to get a——

Mr. STUPAK. When is the anticipated end date?

Mr. SPURGEON. It is between 6 and 8 months so it is tight.

Mr. STUPAK. That is about the end of this administration.

Mr. SPURGEON. It is tight.

Mr. STUPAK. OK, and Mr. Whitfield raised it, these timeframes. So let me ask you a little bit more. How many months do you need to do the National Environmental Policy Act analysis?

Mr. SPURGEON. Well, that is what I indicated.

Mr. STUPAK. So that is about the 8 months?

Mr. SPURGEON. Yes, sir.

Mr. STUPAK. And then you have to finalize the sole source contract with USEC to re-enrich DOE's tails consistent with federal procurement policy, do you not?

Mr. SPURGEON. I am sorry. I——

Mr. STUPAK. OK, you also have to then finalize a sole source contract with USEC to re-enrich DOE's tails consistent with the federal procurement requirements, right?

Mr. SPURGEON. If one were to do a sole source contract, yes, sir.

Mr. STUPAK. Well, it is the only one who can do it in this country. If you go overseas, Russia or France, it is going to be even longer, right?

Mr. SPURGEON. Without getting into the specifics, we do have the potential of other U.S. enrichers or U.S.-based enrichers that would be interested in that because you are talking about something——

Mr. STUPAK. But that is the next 4 to 5 years, aren't you?

Mr. SPURGEON. You are talking about the amount of tails that we have is going to have to——

Mr. STUPAK. OK, but let us back up. There is only one place that can——

Mr. SPURGEON. Yes, sir.

Mr. STUPAK [continuing]. Re-enrich right now, right? That is USEC? So any other one in the United States it is going to be 4 or 5 years before it comes online.

Mr. SPURGEON. It is going to be some time before it comes online. Yes, sir.

Mr. STUPAK. Yeah, so now we are talking two administrations maybe.

Mr. SPURGEON. But you are not talking two administrations to be able to go and get the process and the contracting operation underway, sir.

Mr. STUPAK. Sure, being a Democrat, I hope the next administration is in there for 8 years. But realistically, we only have one processor right now?

Mr. SPURGEON. Yes, sir, and they have a limited amount today of excess——

Mr. STUPAK. Fourteen percent is what they could do.

Mr. SPURGEON. But we are looking at a timeframe when perhaps they could have much more capacity available.

Mr. STUPAK. Well, let me ask you this then about an auction. How many months would it take to set up and complete an auction of an initial—for DOE's depleted uranium, assuming DOE has the legal authority, and I know there is some question there. So how long would it take you to just set up an auction?

Mr. SPURGEON. The competitive process—one way for me to lose credibility with anyone is to tell you how long it takes for us to complete a procurement process. But it is in the order of six months when we talk about going out to do a competitive procurement.

Mr. STUPAK. Six months to set up the auction, and then you will give them at least 30 days, 60 days to submit their bid?

Mr. SPURGEON. Pardon? No, I am talking——

Mr. STUPAK. Complete it in 60 days—or 6 months you said?

Mr. SPURGEON. I thought you meant how long it takes to do a competitive procurement, and my response was that it takes at least 6 months to do a total competitive procurement.

Mr. STUPAK. OK, the reason I am asking these questions, I think you heard from all the members, but, and as you indicated, the secretary—and I find it curious just before this hearing, March 12, puts out a policy. But as I reviewed that policy, which is part of the record, first of all, I am glad he did it. That means when we hold these hearings, the agency is acting a little bit.

But when I looked at the policy, I don't see a schedule in the policy. I don't see a timetable in the policy, and I don't see any milestones to be reached, which would give that policy some weight. So that is the reason why we are asking some of these questions. So does DOE have specific milestones for securing value from its depleted uranium tails? If so, what are these?

Mr. SPURGEON. I have nothing that has gone through any kind of internal review for specific milestones. We have just issued the policy statement. And as I mentioned, we are proceeding today. The policy statement, by the way, applies to all of our uranium inventory and——

Mr. STUPAK. Sure.

Mr. SPURGEON [continuing]. Should be viewed as an integrated effort because, and it is stated in there, we are proceeding forward with some pieces of that today. Such as the blend down of high enriched uranium and moving forward with the environmental assessment needed to do the enrichment of natural and depleted.

Mr. STUPAK. OK, so the answer is there are no specific schedules, and there are no specific time milestones?

Mr. SPURGEON. Not at this time, sir.

Mr. STUPAK. OK, on February 4, Chairman Dingell and I urged DOE to issue a request for information to test utilities' interests in bidding on depleted uranium tails. Your March 12 reply did not respond to this suggestion. So therefore I have to ask you, is DOE going to issue a request for information to gauge market interest regarding the depleted uranium tails?

Mr. SPURGEON. The staff is working on that and——

Mr. STUPAK. So that is a yes?

Mr. SPURGEON [continuing]. That is something that will be decided. I can't tell you. That is a department decision, but I can tell you there is staff work directed toward that objective.

Mr. STUPAK. So that is a maybe?

Mr. SPURGEON. I can only tell you what I have authority to say is happening.

Mr. STUPAK. Well, as GAO, it sounds like you have no specific policy to deal with this issue.

Mr. SPURGEON. I am sorry.

Mr. STUPAK. As GOA—GAO—I am having a rough time today. It sounds like you don't have a specific policy on how to handle this.

Mr. SPURGEON. We issue a request for expressions of interest when we need that to be able to inform a particular procurement action. The one that probably is, I would say, in the lead right now is some of our off-spec material because of the urgency associated with the containers that that off-spec material happens to be held in. So we are proceeding forward on dual tracks here, not just a single track relative to——

Mr. STUPAK. All right. Well, let me help you out a little bit here. Nuclear Energy Institute, which is going to testify later, in their testimony indicates that the utilities which own 53 reactors, or more than half of the 103 reactors in the U.S., have indicated an interest——

Mr. SPURGEON. Yes, sir.

Mr. STUPAK [continuing]. In your high-assay tails. Isn't this sufficient information for DOE to make a decision to direct test market interest?

Mr. SPURGEON. We are aware of that interest. We are aware of the interest in a number of people. So we are very confident that we will have sufficient interest in the tails in order to have a process that will allow us to get fair value to the government.

Mr. STUPAK. All right. Well, the GAO says that the DOE's legal interest or legal—let me quote now—"authority to sell or transfer tails in their current form is doubtful" because no part of USEC Privatization Act "specifies conditions under which depleted uranium may be sold." Do you agree with GAO's legal opinion?

Mr. SPURGEON. Sir, as the secretary's statement said, the department does have broad authority under the Atomic Energy Act to sell, transfer, and otherwise utilize its inventories of depleted natural and enriched uranium.

Mr. STUPAK. OK, but GAO says they doubt you have the authority. So do you believe they do? Other than this broad discretion?

Mr. SPURGEON. Sir, we are not aware of anything that has happened that would repeal that broad authority that we have. However, the department has not yet received and we do not yet have an analysis of the GAO's opinion. That is something—I would be glad to take that issue for the record and have our——

Mr. STUPAK. Well, when would you be in a position to tell us and be able to advise the committee whether or not you would need the legal authority or have the legal authority?

Mr. SPURGEON. I will be glad to take that back and provide you a response for——

Mr. STUPAK. Can you give me some time which that will happen?

Mr. SPURGEON. Anything that I would tell you would be a guess, sir, and I would rather give you that——

Mr. STUPAK. All right, well you announced in a conference call with congressional staff that DOE issued a contract for the environmental assessment, as you indicated here this morning. Does the DOE need an environmental assessment before it can auction the tails?

Mr. SPURGEON. That also is under review by our general counsel's office, sir.

Mr. STUPAK. Do you have any specific information you can share with the committee today?

Mr. SPURGEON. On the legal authority?

Mr. STUPAK. Or environmental assessment or requests for information?

Mr. SPURGEON. Well, the environmental assessment, we are moving forward with that. So that is happening.

Mr. STUPAK. Let me hold there. Let me go to GAO if I can. Let me ask Ms. Sawtelle if I may. I want to ask you a little bit on the legal issues here. DOE's policy statement says DOE has broad authority or broad discretion, as you heard Mr. Spurgeon say, to sell, transfer, or barter uranium under the Atomic Energy Act. Please explain why DOE lacks the authority to auction depleted uranium tails but has the authority to sell natural uranium. So what is wrong with DOE's view on this?

Ms. SAWTELLE. Sure. Thank you, Mr. Chairman. And we are at a little bit of a disadvantage in the sense that we don't have DOE's legal views. But in essence, we agree that DOE does have general authority under the Atomic Energy Act to sell uranium. That would include depleted uranium. However, in 1996, Congress enacted the USEC Privatization Act. That was the more specific and more recent legislation where Congress focused on how the department should be authorized to sell or transfer valuable uranium assets. There is a provision, Section 3112 of that statute, which specifically says that the secretary may not, shall not, sell or transfer any uranium. It is a very comprehensive term, and it gives some examples. But they are not exclusive examples. Any uranium except as consistent with the section, Section 3112.

So depleted uranium, we believe, would qualify as uranium. I don't think that the department disagrees with that. The question is then what does consistent with this section mean? In our view and under rules of statutory construction, what that means is there has to be essentially another section in 3112 that spells out the conditions. There isn't such a provision. There are provisions spelling out the conditions for natural uranium, low enriched uranium, Russian-origin uranium, other categories of uranium. Congress did not include—and we think there is not a very surprising reason because in 1996, depleted uranium, as we are saying, wasn't valuable.

So Congress didn't explicitly consider that, but nevertheless this prohibition applies. It says you can't sell any uranium except as provided here. There is no provision for that. So while that is something that we would recommend Congress take another look at, it has this opportunity now. As the statute is currently written, we think that the prohibition applies and the department does not have authority to sell the tails at this time.

Mr. STUPAK. Just one more note, and we will go to Mr. Shimkus. If we looked at the '96 law, if we added three words, depleted, uranium, and tails, that would probably resolve this issue if we just amended it. Would it not?

Ms. SAWTELLE. It depends, of course, on what the Congress's policy objectives are, but if Congress wanted to authorize DOE to be able to sell the tails, yes, that would be in the nature of that simple amendment.

Mr. STUPAK. So we need three words?

Ms. SAWTELLE. Yes, sir.

Mr. STUPAK. Thanks. Mr. Shimkus for questions, or Mr. Whitfield, whoever is going.

Mr. SHIMKUS. I told him I would—my graciousness only goes so far. The—but I want to follow up on this timeline, and bureaucratic timelines are very frustrating. So I really agree with the Chairman's kind of analysis, and I just want to go into it a little bit further because there may be a very short window of opportunity to take advantage of current high prices for uranium by re-enriching some of the depleted tails at the Paducah site.

However, as you stated, there is a lot of work that must be completed before this is possible. And the department must identify the categories of depleted uranium that have the highest market value, conduct a cost-benefit analysis on whether enrichment is a viable

option, complete any environmental assessments, and we talked a little bit about that, and conduct contract negotiations with USEC.

Based on my staff's discussions, especially with the department, we have been told by senior procurement staff that DOE needs at least 270 days just to negotiate a contract with USEC—and when they mentioned this to me yesterday, I said that is a whole year in essence—to enrich the depleted uranium.

However, DOE can't begin this contracting process until it completes the cost-benefit analyses and the environmental assessments. So we estimate that DOE will at least need 2 years to complete all this work. Thus, it would not be able to begin enrichment until the summer 2010, just 2 years before the Paducah plant is scheduled to close.

And here are the questions. Is it possible that during the 2 years it may take for DOE to begin enrichment, the price of uranium may come down in price to the point there is no longer any benefit to re-enriching the depleted tails?

Mr. SPURGEON. Sir, anything can happen, but I think you have to, and I believe the GAO in their report alluded to that, that anyone that is going to be buying the tails is going to be looking at the futures market for uranium because that uranium would not be usable as product for use in a reactor until some future date after it has been enriched.

Consequently, when you talk about even selling today, people are going to be looking at what they believe is a fair value for that product based on their perception of the market at the time that product would actually be able to be used. And if we are talking about selling substantial quantities, in order for us not to perturb the uranium mining industry, you are looking at perhaps limiting that to being used for new cores. And those new cores would then be needed in the 2013, 2014 timeframe.

And so my answer to you is, I can't predict the future market for uranium, but I believe that the issue of selling it now or selling it at nearer the time when the material would actually be used in a reactor is not going to make a giant difference in the value received by the government.

Mr. SHIMKUS. I follow commodities, not at the point of risking my own personal money in doing commodities markets. Yeah, what little I have. But I would say anyone who follows commodity knows that there is a possibility of any commodity. Whether it is beans or corn, which I am more familiar with, if there is a worldwide recession, you are going to see the price of a barrel or crude oil drop to where it was just 8 years ago, which a lot of people would be surprised was about $10 a barrel.

So that is why we are focused on the next question. Can we expedite the cost-benefit analysis and environmental assessment? When can you have these completed? Is there an expedited process to move things faster?

Mr. SPURGEON. The process that we are following today, I am never going to say that something can't be done better, because it always can be. But I would tell you that we do have—I know that my office and I know the environmental management——

Mr. SHIMKUS. Well, why are we just—it is yes or no. Can we go faster?

Mr. SPURGEON. We will try, sir.

Mr. SHIMKUS. How about the contracting process? Can it go faster? We are asking. I mean if you can't, tell us no.

Mr. SPURGEON. I spent my career in industry. I can't understand how come it takes so long, myself. So it—we are going to push things as fast as we possibly can, but there are a lot of steps in the way. And those steps have been put there for good reason to protect the integrity of contracting process, so——

Mr. SHIMKUS. Yeah, I fear that we lose a window. I fear that we continue to have not only the loss of this possible revenue and whatever—however, then the Federal Government decides to use that revenue. Plus the continued burden of having something on the books that is going to be worth little to nothing. And that is a huge concern.

The nuclear industry recently developed a consensus position, that is tab 23 in the book, which is what I submitted for the record, on how DOE could sell uranium without disrupting uranium markets. Have you seen this consolidated industry position?

Mr. SPURGEON. Yes, sir.

Mr. SHIMKUS. And do you agree with their targeted deliver quantities for DOE uranium sold over the next 7 years?

Mr. SPURGEON. We have met with them. I very much appreciate the work that NEI did to try and bring together what is in the nuclear industry a plural word, industries, in order to come to a consensus of how we can approach this matter that achieves the objective without—achieves everyone's objective in a way that can be supported broadly across the industry. And, yes, we have worked with them in order to try and get to that point.

Mr. SHIMKUS. You also mentioned the comment about the initial cores of new reactors——

Mr. SPURGEON. Yes.

Mr. SHIMKUS [continuing]. In the previous question. If DOE made its uranium available for new reactor cores, how many utilities would purchase new cores in the near term?

Mr. SPURGEON. Well, all I can tell you is that there are currently nine combined operating license applications that have been filed with the Nuclear Regulatory Commission. And so that forms today, and there is an expectation of five more being filed some time this year. So that gives you a universe of perhaps 14 which would amount to 14 plus, I believe, I think some of them for dual plants. So that is at least 16 reactors that might be in the universe known today, and perhaps more in the future.

Mr. SHIMKUS. Can you explain to us how the core issue helps these new nuclear reactors? And we are basically laymen, so——

Mr. SPURGEON. It helps it by two reasons. It helps the power plant purchasers know that there would potentially be an additional source of uranium such that when they go out for the large purchases of uranium that would be needed to fuel these initial cores, that would not cause an undue spike upward in the price of uranium. But in addition, it does not hurt the uranium suppliers because the uranium supplier, even though they would be perhaps foregoing that initial coreload of business by it being supplied by DOE, they are getting a new plant online. And they then have a

60-year potential supply of uranium for that new plant. So everybody benefits when we get new nuclear reactors online.

Mr. SHIMKUS. And, Mr. Chairman, this is my last question. Based on uranium sales in 2006, DOE could sell 6.7 million pounds of uranium annually with no impact on the uranium industry. That is your analysis. Are you certain that these levels would not harm the domestic uranium mining industry?

Mr. SPURGEON. We say up to that amount, and we also would do a specific analysis prior to that sale. Our anticipation is, sir, that in these early years, it would be less than that number until such time as we would be selling it for new cores.

Mr. SHIMKUS. Thank you, Mr. Chairman. I yield back.

Mr. STUPAK. Thank you, Mr. Shimkus. Mr. Whitfield for questions please.

Mr. WHITFIELD. Thank you, Mr. Chairman.

Mr. STUPAK. Ten minutes.

Mr. WHITFIELD. The reason that I had introduced this legislation in the first place was obviously there is an equity issue here, and that is that since the late '40s, there has been a government-operated plant there in Paducah and also at Portsmouth. And during that time, there has been a legacy of environmental problems. And even today, the federal government is spending at Paducah alone in the neighborhood of $100 million a year on cleanup.

In addition to that, both communities have had a significantly large number of health problems for people that had worked at these plants. Certainly before the USEC plant, but when it was a munitions plant. Many people were exposed to chemicals and so forth without their knowledge, and there have been significant health problems which lead us to introduce and pass legislation that established a compensation program at those two plants as well as other plants around the country. And I might add that in Paducah alone, that health compensation plan has been in the neighborhood of $220 million on health issues if someone had 1 of the 12 cancers contracted as a result of working there.

So one of the arguments that we are making in this legislation is that because of just the equity issue, the fact that these communities have suffered as a result. They benefited through jobs and good-paying jobs. They have also suffered because of environmental and health issues.

And so now that the uranium is at a price where there is some benefit, we feel like that, and this legislation would direct, that any profits go into the D&D fund to help continue to clean up those communities.

And there are people—obviously with an issue this complex, people have different views. And there are many people who say well, we want to auction it off. We want to let the highest bidder, wherever that entity may be, buy this stuff and get it reprocessed wherever they want to get it reprocessed. But I was noting in the GAO report, Mr. Robinson, that you indicated that more than likely if it went to auction, it would have to be sold at a deeply discounted price. Is that correct? Is that your view or your analysis?

Mr. ROBINSON. Based on our discussions with industry and others, there is a certain amount of risk that would be assumed by the buyers, and they would factor that risk that they would be assum-

ing into their price without a reasonable doubt. The question is how steep would that discount be, and would it be greater than the cost that the government would incur by re-enriching the product itself? And that is what we do not know.

Mr. WHITFIELD. And I suppose that the risk would be one, the actual transportation of these canisters—some may or may not be suitable for transportation. Two, can you find someone to reprocess it? And what would be some other factors that they would be concerned about?

Mr. ROBINSON. I am quite certain they would be concerned about what is happening to the price of the alternative supplies that they——

Mr. WHITFIELD. Right.

Mr. ROBINSON [continuing]. Could otherwise acquire, and so they would be assuming some sort of price risk.

Mr. WHITFIELD. Right.

Mr. ROBINSON. And that they would be factored into the—I mean as a basic business decision. Obviously I am not a businessman, but these seem to be fairly obvious components into a decision.

Mr. WHITFIELD. Well, would I be accurate to say—I mean would I be stretching it to say that probably the best economic benefit for the government would come from the option of simply contracting the government to contract, reprocess, and sell that material?

Mr. ROBINSON. Our position is until the government decides what its policy objectives are—if you are attempting to achieve a most immediate return to the Treasury—obviously either selling them outright, depending on what the discounting would be, and if acquiring the legal authority to do so, or to go through USEC as the only source of re-enrichment right now.

Longer term, it is hard to know whether that is the best because, as we all know, the current USEC processing costs are much higher than others would be. That is why they are pursuing a different, more efficient technology.

Mr. WHITFIELD. But right now, the only option is to just leave it stored where it is or enrich it because legally right now it cannot be auctioned according to your view.

Mr. ROBINSON. That is correct; although, I mean a three-word technical amendment doesn't seem like a huge hurdle, but I guess it could be.

Mr. WHITFIELD. Right, but you would not be prepared to say which one of the two options would be most likely to bring the biggest dollar value to the government?

Mr. ROBINSON. No, sir, I can't because I don't know what the discounting factor would be built into the auction process for selling the tails as is, and also assuming that the government acquired that authority. Without some basic facts, it is hard to be able to compare the two alternatives.

Also, there is a third alternative which obviously is to wait, assume that the prices are going to stay what they are, and wait for new technology alternatives, enrichment alternatives to appear, which is 5 years plus away.

And these are all options. What I don't have is all the facts to be able to compare the—to pencil all the dollars and cents out and

make a conclusive determination. And frankly that is at the root of our call for DOE to do just that.

Mr. WHITFIELD. Right, and Chairman Stupak and Mr. Shimkus both touched on this, and that is a concern that we all have is the length of time, Mr. Spurgeon, it would take to do this. And everyone is talking about 270 days at a minimum. Now, if our legislation passed directly the Department of Energy to enter into a contract with USEC to start reprocessing and do so within X number of days, how would you react to that? I know we passed legislation up here directing things be done in 90 days and 100 days, and they are not done. But would we expect that this legislation would, if it passed, would substantially shorten the time necessary for contract?

Mr. SPURGEON. Well, sir, I am quite familiar with contracting from a private sector standpoint. I am not such an expert in contracting within the government environment, however. Obviously the department would make every attempt to follow the law as passed. But unless the law were to somehow change the procedures by which we have to go through a contracting process, it would be subject to that process.

Mr. WHITFIELD. Now, some people seem to be expressing some concerns that, because USEC is the only company that is currently reprocessing or enriching uranium, that that is a problem, that there is something inherently wrong about that that only one company is the only entity that the government can go to.

From your analysis of this problem, does that concern you that there happens to be only one company that is doing that in the U.S. today? Do you have enough concern that that would preclude you from recommending that you enter into a contract with that entity to do it without auctioning it off?

Mr. ROBINSON. Obviously, from a GAO perspective, competition is best as a general rule, given the circumstances. But that is not the circumstance we find ourselves in here today.

Mr. WHITFIELD. Right.

Mr. ROBINSON. If the objective is to get a fairly immediate return and protect ourselves against downside price risk——

Mr. WHITFIELD. Right.

Mr. ROBINSON [continuing]. Then moving with the quicker option is probably best. However, let us all be informed that that quick option is perhaps the most costly re-enrichment option that is likely to be available—much, much more costly than to be likely to be available down the road. So essentially we are locking ourselves into a fairly high-priced enrichment option. But again, that may be more than offset by the price risk of uranium prices dropping. And again, without some hard and fact facts, it is hard to make a conclusive judgment.

Mr. WHITFIELD. Right.

Mr. ROBINSON. At the end of the day, it might make sense to do some sort of a balanced approach where you hedge your bets. You do some of this. You do some of the sales. You hold some in reserve. A balanced approach might end up being the best alternative.

Mr. WHITFIELD. Right, one other point I just wanted to touch on briefly. In GAO's testimony—well, first of all, Mr. Spurgeon, the

Department of Energy believes that at today's market prices for uranium, the depleted uranium with assays greater than .35 percent is attractive for re-enrichment. GAO says that assays as low as .30 percent would be attractive for re-enrichment. And it is my understanding between .30 and .35, there is something like 220,000 tons. And so I was curious why is there this difference in your view of .35 and above and GAO's .30 and above?

Mr. SPURGEON. I would doubt that is really a difference us. .35 and above is something that I think you can say with a very high probability, based on today's economics, is going to be attractive. .30 and above could very well be but——

Mr. WHITFIELD. OK.

Mr. SPURGEON [continuing]. It is just a matter of where one puts the probability curve.

Mr. WHITFIELD. So it is not a significant issue or difference? OK. Thank you.

Mr. STUPAK. Thank the gentleman. Mr. Dingell, your option. You would like to give an opening statement, or do you want to go to questions? If you want to do an opening statement then questions, we are more than happy to hear from the full chairman.

Mr. DINGELL. Well, first, thank you for your courtesy. Second of all, I would ask unanimous consent to put my statement into the record.

Mr. STUPAK. Without objection.

[The prepared statement of Mr. Dingell follows:]

STATEMENT OF HON. JOHN D. DINGELL

Mr. Chairman, thank you for holding today's hearing. It is not every day that we have the opportunity to save the taxpayer money. This Subcommittee has identified the opportunity to return $7.6 billion to the American taxpayer. Today, we will explore why the Department of Energy (DOE) has failed to take advantage of this opportunity.

Specifically, we will examine whether the Department of Energy has developed a concrete plan to recoup for the taxpayer the unexpected windfall caused by a tenfold increase in the price of uranium. That jump in uranium prices has transformed a large part of DOE's depleted uranium tails from an environmental liability to a potential $7.6 billion asset, according to estimates by the Government Accountability Office (GAO).

This price jump is not brand new. Almost 3 years ago, the uranium prices increased to the point where re-enrichment of tails became economically attractive. Despite extended internal deliberations, the only tangible evidence of DOE action is a Secretarial Policy statement issued several weeks ago, after they learned of our hearing and the critical GAO report. We need more than policy statements and a department that simply reacts after they get caught by Congress.

Eight years ago, the depleted uranium had zero value, and my concern is that it could become worthless again while DOE dithers. DOE needs to show some urgency, and not simply punt this to the next Administration.

We need to assess whether Congress needs to legislate, as GAO suggests, and whether we need to set timetables, since DOE appears unwilling or incapable of assuming leadership.

Should DOE contract to re-enrich these tails at Paducah? Can a deal be struck that is fair to American taxpayers? Should we auction these valuable uranium tailings to utilities? Many in the power industry agree with this approach. We sent the DOE Under Secretary a letter on February 14, 2008, asking that he solicit the nuclear utilities for their interest in buying tails at auction. This was not done. We need to learn why.

While we understand it will take a decade to fully capture such benefits due to the limited capacity of uranium enrichment in the United States, DOE needs to move on this so the process can begin this year.

We must keep in mind that today's hearing is not just about depleted uranium. It is about the opportunity to return billions of dollars to the Treasury that could fund other needed programs. Using GAO's estimate, DOE could potentially convert its depleted uranium waste into a $1.4 billion return to the Treasury over the next 4 years. How could such revenue be used? Here are some examples:

- It could help finance $210 million for the Food and Drug Administration to modernize safety standards for fresh produce and other raw foods and implement inspection programs.
- It could provide 4 years of health insurance coverage for half a million children under SCHIP.
- It could close $21 million in budget gaps to Indian Health Services program.

Mr. Chairman, I congratulate you for holding this hearing so we may assess DOE's stewardship of this resource, and learn from our witnesses how best to maximize returns to the American taxpayer.

Mr. DINGELL. Third of all, when it suits the chair, I would be grateful for a chance to ask a few little questions.

Mr. STUPAK. Questions? Now would be the time, sir.

Mr. DINGELL. To Mr. Robinson. Didn't the GAO find that DOE is sitting on an enormous windfall in the form of depleted uranium that as recently as a few years ago was deemed to be waste but today is worth $7.6 billion? Is that right?

Mr. ROBINSON. That is our analysis. Yes, sir.

Mr. DINGELL. Now, and if we were to reprocess that uranium, we would be addressing both a moneymaking opportunity but also a chance to clean up what is potentially a significant environmental problem. Is that not so?

Mr. ROBINSON. The disposition options that we laid out to include re-enriching would accomplish those objectives. Yes, sir.

Mr. DINGELL. Now, I believe the GAO has found DOE has been working on a uranium sales strategy for nearly 3 years?

Mr. ROBINSON. Yes, sir.

Mr. DINGELL. And isn't it also true that GAO found that DOE has not completed its plans with sufficient speed to take advantage of current market conditions?

Mr. ROBINSON. Our judgment is is that a more detailed, comprehensive plan and strategy is in order, and that would facilitate the sales and return maximum value to taxpayers.

Mr. DINGELL. Now, I believe that GAO also found that 8 out of 10 utilities interviewed by the GAO had interest in bidding on this excess uranium. Is that right?

Mr. ROBINSON. Yes, they expressed general interest. Yes, sir.

Mr. DINGELL. Now, Mr. Robinson, in your opinion, would it be a prudent first step for DOE to issue a request for information to identify the legal and market-related issues so that DOE could commence a successful auction?

Mr. ROBINSON. Yes, sir. The most information possible on what the interest is out there to purchase these tails, if that is the option that is a, decided to be the best one, and b, legal, that would be a good step. Yes, sir.

Mr. DINGELL. Now, is there any reason in your mind why DOE should not move promptly to realize as much of the $7.6 billion in value as soon as possible, recognizing that there are short-term constraints on re-enriching tails and constraints on how much the market could absorb?

Mr. ROBINSON. Speedy action to take advantage of the current high price of uranium is in order, keeping in mind that a few years ago it was essentially worthless. A few months ago, it was essentially worth three times what we think it is worth now. So prices are fairly volatile, yes.

Mr. DINGELL. Now, these questions to Mr. Spurgeon. Mr. Spurgeon, what percentage of your time has been spent advancing the global nuclear energy partnership over the past year?

Mr. SPURGEON. I would totally guess, sir, because I don't keep a clock, but something like maybe 20 percent.

Mr. DINGELL. OK, now what percentage of your time has been spent the last 2 years developing a strategy to derive value from DOE's excess depleted uranium stockpiles?

Mr. SPURGEON. I have spent—I am going to again guess—maybe half of that, 10 percent. Again I don't keep a clock on myself.

Mr. DINGELL. Has anybody else spent any time on this question?

Mr. SPURGEON. There are a number of people that have spent time on this——

Mr. DINGELL. I would like you to give us, submit for the record please, who has done what with regard to these matters at DOE. Now, Mr. Spurgeon, given GAO's findings, what are your immediate plans to take advantage of current market conditions and convert this depleted uranium into cash for the American people?

Mr. SPURGEON. Step 1 is the Secretary initiated and released a policy statement on how we were going to proceed forward. Step 2 is that we have underway an environmental assessment which is required by the National Environmental Policy Act prior to us enriching uranium for ultimate sale as part of this. Step 3 is we are doing, as the GAO has recommended, the cost-benefit analysis of the best value and way in which to dispose of the current inventory of not only our depleted uranium but our natural uranium and our high enriched uranium.

Mr. DINGELL. Now, what is the date by which you and DOE are going to be able to sell off or auction off these tailings? What time? This month, this year, this decade? When?

Mr. SPURGEON. For going forward with enrichment, we would require a suitable finding, a record of decision by the secretary following preparation of the necessary environmental analysis. That, while it is underway, would some time this fall is my estimate.

Mr. DINGELL. This fall?

Mr. SPURGEON. Late summer, this fall. Yes, sir. I don't control the schedule, but that is a guess.

Mr. DINGELL. I am going to ask you to procure for the Committee a statement signed by the Secretary indicating the date on which that will be completed. And I will ask that the record be held open so that we may receive that. You understand what you have been requested to do, sir?

Mr. SPURGEON. A schedule for completion of the environmental assessment, Environmental Policy Act requirements. Yes, sir.

Mr. DINGELL. Now, who controls the schedule down there? You or the Secretary or who?

Mr. SPURGEON. There are a number of people involved. The program office principally responsible for this is our environmental

management organization, when we get down to actually dispositioning this material.

Mr. DINGELL. So——

Mr. SPURGEON. But the general counsel's office is very much involved in——

Mr. DINGELL. So who is your responsible decision maker? It is always nice to know who has the responsibility for making the decision, and if DOE doesn't know who that is, we have a bit of a problem, don't we?

Mr. SPURGEON. I am responsible for nuclear policy, sir, as the Assistant Secretary for Nuclear Energy.

Mr. DINGELL. So it is your responsibility?

Mr. SPURGEON. I have the overall responsibility in my court.

Mr. DINGELL. All right, now you worked for the USEC. Is that right? The United States Enrichment Corporation?

Mr. SPURGEON. Yes, until December of——

Mr. DINGELL. How long?

Mr. SPURGEON. I worked for them for 2-and-a-half years.

Mr. DINGELL. What was your position when you left?

Mr. SPURGEON. I was the chief operating officer.

Mr. DINGELL. OK, and you received a cash payout, I believe, of about $5.9 million when you left?

Mr. SPURGEON. My compensation is a matter of public record. Yes, sir.

Mr. DINGELL. Now, isn't it a fact that you have former colleagues at USEC who would be negotiating a sole source contract with DOE to re-enrich the depleted uranium and who would personally benefit from the deal with the Department of Energy?

Mr. SPURGEON. I am sorry. Did you say that I would personally benefit?

Mr. DINGELL. Well, no, your former associates at USEC.

Mr. SPURGEON. If there was something that happened positive to USEC, obviously it would be a benefit to the employees of the company.

Mr. DINGELL. Now, have you ever recused yourself from dealing with your former company and friends and colleagues at USEC?

Mr. SPURGEON. No, sir.

Mr. DINGELL. Have you got authorization or an opinion from the ethics officers at the Department of Energy which says that you should or should not recuse yourself?

Mr. SPURGEON. Yes, sir. My former employment was—and any restrictions on what I could do—was thoroughly vetted at the time prior to my nomination for the current position.

Mr. DINGELL. Will you submit that to the Committee please?

Mr. SPURGEON. I think we did.

Mr. DINGELL. I am assuming this is in writing. So I am assuming that you can submit this to the Committee.

Mr. SPURGEON. I believe we did already, because I think it was asked for.

Mr. DINGELL. Well, appreciate if you did so. Does the Secretary of Energy know you have not recused yourself?

Mr. SPURGEON. Yes, sir. The Secretary of Energy knows I have no recusals whatsoever.

Mr. DINGELL. I think my time is about expired, Mr. Chairman. I will wait for a second time.

Mr. STUPAK. You still have 2 minutes, Mr. Dingell. We went 10 minutes on this, and the recusal statement would be Exhibit Number 12 in our book.

Mr. DINGELL. Well, I will proceed at the pleasure of the chair.

Mr. STUPAK. Please continue.

Mr. DINGELL. Has your—I will repeat this question. Have you got a legal opinion from the legal counsel at DOE on your recusal and whether you should be recused or not?

Mr. SPURGEON. I don't happen to be a lawyer, but I do know that it was determined prior to my being nominated that I was not required to recuse myself from any activities with any company upon my confirmation as assistant secretary.

Mr. DINGELL. Would you please submit that to the Committee if you could?

Mr. SPURGEON. Yes, sir, if it——

Mr. DINGELL. All right.

Mr. SPURGEON [continuing]. Whatever exists.

Mr. DINGELL. Now, this question for Mr. Fertel. Isn't it the case, Mr. Fertel, that there are utility companies where members of the Nuclear Energy Institute that would bend on DOE's high-assay depleted uranium tails if the DOE put these out to auction? Where is Mr. Fertel? Come on up here. I am sorry. Never mind. We will get you——

Mr. FERTEL. I will stand.

Mr. DINGELL. No, Mr. Fertel, we will get you on the next panel.

Mr. STUPAK. No, we will get you on the next panel.

Mr. DINGELL. Sorry. I guess that completes my questions.

Mr. STUPAK. Thank you, Mr. Chairman. One of the problems we have in this matter is it appears, Mr. Spurgeon, you are the person who will make the recommendations on whether we do auction or whether we do a sole source contract with USEC, and your prior employment with USEC, and it almost appears like a conflict of interest. If you look at Exhibit Number 12, it is in the exhibit book. Should be right there in front of you. In there, the recusal form is really limited to dealing only with your family members, and that is a concern with the generous payout you received when you left there, and then now if you are the person who is going to make the decision and recommendation to the secretary to make a sole source contract to the company you used to work for, it raises a lot of red flags.

So if you do have an opinion, a written legal opinion on your recusal or an opinion saying you can, in your role as Under Secretary, deal with USEC even though you are their former employee, I think it would be very helpful for the Committee because when you were asked earlier for your RFI on this matter, we never received one. When we look at your policy, we asked—Mr. Dingell and I wrote February 14, received no answer.

When you talk about the risk in questions from Mr. Whitfield, when you talked about those risks, that would be in an RFI, but you failed to produce one.

When you talk about the policy, as I indicated in my earlier statements, there are no schedules. There are no time limits. There

are no mile posts. It seems like this whole thing is being dragged out way too long, and if so, it is probably to the benefit of USEC, which raises again the issue of maybe a conflict.

So if you have a legal opinion in writing from your counsel, please put that forth. In fact, because this issue may have come up, we even sent your office an e-mail asking that you have legal counsel here so we could get to the bottom of these questions. So I am sure that the full committee chairman, that was some of his questions. That was some of the questions where I was going to move on also.

So let me ask you this. Would DOE then, because we have this sole source or this one company here in the U.S. can reprocess, USEC, would DOE consider contracting—and I sort of alluded to this question earlier—either companies in France or Russia for re-enrichment as a way to spur the competition that Mr. Robinson spoke to? Would you consider doing that?

Mr. SPURGEON. I think anything would be and could be considered by the Department of Energy. I think as the policy did lay out, we are focused on supporting the growth of the U.S. industry, both from a reactor standpoint and from a viable fuel cycle standpoint. That includes all of the front end from uranium mining through conversion through enrichment to actually the construction of the reactors themselves.

Mr. STUPAK. Well, let me ask you this then. Go to tab 8 in the binder. Because this is an e-mail. You are going to spur competition. I am a little concerned about this because it says—this is a September 16, 2006, e-mail from you to your general counsel, David Hill, which discusses whether DOE should take on a major review of a $9.5 billion sole source decommissioning proposal by Energy Solutions and USEC. The deal would lead to USEC's takeover by Energy Solutions, and that is slide number six.

You wrote, "we are about to have a USEC train wreck that could have serious effect for nuclear energy in the U.S. Like it or not, DOE is involved. Whether or not we can prevent the train wreck is questionable, but I believe we must try our best." So what do you mean by a "USEC train wreck" and "I believe we must try our best"?

Does your e-mail push DOE issues or DOE officials to try to address legal obstacles related to the sole source proposal in order to craft the deal? Wouldn't this deal ultimately benefit your former colleagues at USEC? So I see just the opposite from this e-mail on what you just said about trying to spur competition if you want to prevent the USEC train wreck. And it looks like you are trying to craft the deal to help our USEC, based on this e-mail.

Mr. SPURGEON. Sir, my objectives in coming to this job were to do whatever I could to support the resurgence of nuclear energy in this country. A piece of that is the front end of the fuel cycle. I was asked a schedule or percentage of my time a little bit ago. I probably overestimated some of the, you know, some of the time that I might spend on this particular aspect of it.

But I would say that anytime that we look, and if you look at the timeframe involved there, November 16, 2006, there was some real concern. And it was made known to Members on The Hill and

also made known to the Department of what would happen to our domestic enrichment capability over the next several months.

We had something that was presented to the Department that deserved a look, as I believe it is our job to look at any potential alternative that might be a benefit to the U.S. taxpayer. The end result of that look, which the general counsel did do—together with our environmental management organization, they really had the lead in this—was to determine that it was not something that we felt we could pursue.

But I believe that we have an obligation to look at those things, and that is really what the intent of that e-mail, although albeit perhaps I wrote it in a little more dramatic fashion than I might have if I thought about it a little longer. But I wanted the general counsel's office to give some priority to the issue of looking at the ramifications of this sort of a contractual vehicle.

Mr. STUPAK. Well, but did your views about preventing a USEC train wreck also have bearing on the overall amount USEC receives from DOE for processing depleted uranium?

Mr. SPURGEON. No, this wasn't really in that context at all.

Mr. STUPAK. Let us go back to Mr. Secretary's policy. Implicitly allows DOE to use a contract for re-enriching DOE tails as a vehicle to subsidize USEC if USEC's success was deemed a departmental objective, right?

Mr. SPURGEON. I believe that the policy statement says is that, in any event, the Department would receive fair value for any materials that it does contract for. That is certainly the objective. I——

Mr. STUPAK. Well, then let me ask you this.

Mr. SPURGEON. Sure.

Mr. STUPAK. Is there a way to make this contracting process that you are about to go through transparent to Congress? For example, would DOE be willing to share a draft of the sole source contract with GAO in this committee before it is finalized?

Mr. SPURGEON. The Department of Energy has made no decision to go down any sole source contracting route whatsoever. Obviously——

Mr. STUPAK. OK, but whenever you make that decision.

Mr. SPURGEON. Pardon?

Mr. STUPAK. Whenever you make that decision, if there is a contract, will you provide it to GAO and to this committee so we can make sure there is transparency to make sure things are above board and we are not looking to prevent a train wreck or to cause a train wreck?

Mr. SPURGEON. Sir, I will do whatever—I am not going to make a commitment that I can't follow.

Mr. STUPAK. Then how can we ensure transparency then? So the questions that I am sure are a little uncomfortable for you and a little uncomfortable for us to ask you, that we have that transparency so those questions are cleared up and there is no question about what is going on. Because if you look at tab 12, again the one in front of you, your recusal, it only says you are to recuse yourself from family interests. You are not recused from any other matter including your former employer. So I would think that boy, that is almost a conflict when you go from the CEO of USEC right

into the decisionmaking process on how, whether we auction or do a sole source contract to USEC. You will make the decision, right, to make the recommendation to the secretary on which way we go? You will make that decision to make the recommendation after you gather all the information.

Mr. SPURGEON. Well, I want to make clear the prime contracting responsibility for disposition of our tails is our environmental management organization.

Mr. STUPAK. Who is going to make the recommendation to you. They are under——

Mr. SPURGEON. Well no, he is going to make the recommendation to the secretary as well. He does not report to me in any sense of the word.

Mr. STUPAK. Well, I thought you were head of all nuclear policies.

Mr. SPURGEON. From a policy standpoint. To integrate our department-wide policy on disposition of all of our——

Mr. STUPAK. Sure.

Mr. SPURGEON [continuing]. Assets so that we are coordinated.

Mr. STUPAK. So you would be involved——

Mr. SPURGEON. It is a coordinating function.

Mr. STUPAK. And you would be involved in that decisionmaking? You would coordinate with this management group.

Mr. SPURGEON. We try to coordinate our actions within the department. Yes, sir. But I do not control the contracts from the Environmental Management Organization in any way, shape, or form.

Mr. STUPAK. So then there shouldn't be an objection then, if there is a contract, to share it with GAO to make sure that we are getting the best bid for the taxpayer and that we are doing it in everyone's best interest, to share it with GAO and this committee then? There shouldn't be an objection then.

Mr. SPURGEON. That is one that I will take back. I don't want to make a commitment relative to what is shared prior to a contract being issued that might conflict with departmental policy.

Mr. STUPAK. We are not asking prior to. When you get it done, drafted, please share it with GAO and share it with us. That is what I am asking for. I am not asking for prior information.

Mr. SPURGEON. I will take that back and provide you an answer to that question for the record, sir.

Mr. STUPAK. Mr. Shimkus for questions.

Mr. SHIMKUS. Thank you, Mr. Chairman. I am actually kind of disappointed in how this hearing has turned. Here are my concerns. Addressing Mr. Spurgeon, how former colleagues are going to benefit. I am not happy with this. There doesn't always have to be a crook or a bad guy under every rock in every place in the world, and I was just looking at these e-mails today. There is one, August 6, 2007, from Mr. Spurgeon saying "I'm traveling Monday and Tuesday from what I can on my, I guess, Blackberry. This issue may just be too hard to tackle in the remaining 17 months. Let's talk on Wednesday." In other words, can't do it.

I don't understand what is the big deal. Sole source. There is one—we are lucky we have got one reprocessor left in this country after what happened in the industry with the nuclear stuff with the weapons. And we are glad that it is in Paducah, and I am glad

it is across the river from my district in southern Illinois. We are going to push this stuff to France or Russia after the Boeing debate and Airbus? I don't think so.

So my concerns are we got a commodity product on the ground that we have to manage, and it is costing the Federal Government money. It is at record prices. We ought to get rid of it, and we ought to do it in a way that saves uranium miners. And the concern that I have, Mr. Spurgeon, and we have met numerous times, is that we need to do all we can to move up and expedite this as fast as possible. Otherwise again following commodity prices, we lose a window, and then it sits there again. And then we have the cost, and then we can't use that money to do other things that we might be able to do if we have leveraged real dollars.

We have been talking in between this, and I think there is an opportunity to suggest legislation that will do that. And I look forward to working with my colleague. I just put it on the record. I am disappointed that it has turned into a hunt, and I don't think it should have. And I yield back my time.

Mr. STUPAK. Well, since it was raised by Chairman Dingell and myself, let me just clarify a few things here. February 14, 2007, we asked for a request for information to test utility interest in bidding for depleted uranium tails. We get that we are looking into it, and we basically get no answer. We go to NEI. They can tell us 53 of 103 are interested in doing something. We have asked for other information as far back as 2006. Received no answer. The longer this drags out, once again we could find ourselves, as you indicated earlier, in a worldwide recession in which it is worth nothing.

So the quickest way, if we are really interested in benefiting the American taxpayer, is to go to the auction. And even in my opening, I said there is a hybrid way to do this. Auction part of it. USEC can only do 14 percent a year, so why not auction part of it while we have got a high price for uranium? We have been after DOE and apparently Mr. Spurgeon's office to tell us what authority do they need. They can't tell us. GAO can tell us. Has there been an inquest to do it? No.

It seems like the more this has dragged out, the uncertainty for 3 years in which it has taken to get us even to this point that we continue to lose money. And we are looking at the taxpayers' interests here. And it certainty looks like the more you drag this out, it looks like the contract, the sole source contract, goes to USEC, which benefits USEC, which is a former employer with a very generous golden parachute payout, $5.9 million—$5.4 I think it was, whatever it was. That is something.

So that is the reason for the questions. We ask for transparency. We can't get commitments on transparency. No, we are staying on this, and we want to do what is in the best interest of the taxpayer.

And, you know, it is like when DOE sold the stuff to Bonneville way back for the treasury, $7 million is worth $220 million. That is another form of questions I could go into. So what happened there? Was that an indirect appropriation to the Bonneville folks? There are a lot of questions on the way this has been handled in the last few years that I would be more than happy to go into if you would like to.

But I just thought I better respond to your comments. So yes, it has been a tough hearing. It is uncomfortable for all of us, but I think we need to answer these questions. Mr. Whitfield, for questions or comments.

Mr. WHITFIELD. Yeah, I do have a comment also. In the next panel, we have Rob Ervin with us, who is the president of the United Steel Workers Union, who is going to be advocating that USEC be given the sole source contract to reprocess these tails.

Now, I am not here to defend Mr. Spurgeon, and I had no idea of what his severance package was at USEC. But USEC is the only uranium enrichment company still operating in the U.S. And if we want to go to a speedy resolution of this, I have no objection to auctioning off some of this.

But if we could pass my legislation, H.R. 4189 directing the Department of Energy, there would not be any question that there is a quid pro quo here in allowing this contract to go forth because it would be fully vetted by the Congress. And what we would be doing is one, we would be helping these communities clean up this waste. Two, we would be protecting jobs. And three, we would be delivering a significant amount of money to the Federal Government.

And the fact that Mr. Spurgeon is a former employee of USEC, I am not concerned about that because we have a bill here that, if we could get through Congress, vet the issues, and maybe we could do a combination. Maybe there could be a public auction, and maybe we could do reprocessing because we need reprocessing to keep these jobs in Paducah.

And so that is my interest in this. That is my only interest in it, and I do think that we have an opportunity here to go to a combination or some method so that the country can benefit, the communities can benefit, and the employees can benefit. Thank you.

Mr. STUPAK. Very good. Since I brought it up, let me ask you this then, Mr. Spurgeon, since it is part of our concerns up here. 2005, DOE transferred about 18,500 metric tons of high assay tails to the Bonneville Power Administration, which had to be re-enriched by USEC. This uranium will be used to make fuel for the Columbia generating stations run by Energy Northwest. The U.S. Treasury received only $7 million for the high assay tails, where Bonneville Power Administration estimates that it saved $220 million on fuel costs under the deal. What would be the basis for only receiving $7 million back when the benefit is $220 million?

Mr. SPURGEON. I will have to take that question for the record, sir. That happened to be during a period in time when I was not at USEC and I was not in the Department of Energy. I was happily playing golf in Florida.

Mr. STUPAK. OK, well we appreciate the fact that the rate payers up in the Northwest may receive a break and a benefit, but would you consider $7 million equitable compensation to U.S. Treasury for the value of this uranium when BPA got about $220 million?

Mr. SPURGEON. Sir, you have to look at the circumstances at the time, and I can't comment on that just sitting here today.

Mr. STUPAK. Well, do you think it is fair, $220 million——

Mr. SPURGEON. It depends on the circumstances at the time, sir. You know obviously over these past couple of years, since 2005, the

price of uranium has gone up. I can't speak to what the projections were at that particular point in time.

Mr. STUPAK. Well, do you agree with the GAO recommendation that the Secretary of Energy should complete a comprehensive uranium management assessment as soon as possible to take advantage of the recent increases in uranium prices?

Mr. SPURGEON. Yes, sir, but I would also say that that is not the completion of that entire assessment, which brings together all of our uranium assets is not a prerequisite for us being able to move forward. This isn't something that——

Mr. STUPAK. Would you recommend to the Congress that we change the '96 law and put the three words in, "tails" and "depleted uranium" so you could auction part of it off so we could immediately take advantage of the high price for uranium? Would you recommend that to the Congress?

Mr. SPURGEON. Sir, I will not speak to what our official legal recommendation will be. I would tell you, as a program manager, I would like to have unambiguous authority to have that flexibility available to me.

Mr. STUPAK. OK, let me ask Ms. Sawtelle this question. The GAO legal memorandum indicates that the government must receive "reasonable compensation from depleted uranium sales if DOE relies on its authority under the Atomic Energy Act." That is the one of 1996 we were speaking of.

Ms. SAWTELLE. Yes, sir.

Mr. STUPAK. However, if DOE sold this material under authority of the USEC Privatization Act, sales must "not be less than fair market value." So one says reasonable compensation. The other one says not less than fair market value. Are these two terms interchangeable, or does the term "reasonable compensation" allow DOE to accept less than fair market value?

Ms. SAWTELLE. Mr. Chairman, we haven't looked specifically at that. I do know that the statute, the Atomic Energy Act, and the USEC Act, neither of them defines those terms. And we haven't again looked at it. I would make the observation, and looking at the department's policy statement as well, as you pointed out, the requirement under the Atomic Energy Act is for reasonable compensation.

The term that the Department uses in the policy statement is reasonable value. I am not sure if they intend a difference there, but their description of that in their policy statement says "reasonable value takes into account market value as well as other factors, such as the relationship of a particular transaction to overall departmental objectives and the extent to which cost of the department have been or will be incurred or avoided."

So again this isn't something we have looked at legally, but that on its face sounds like it is essentially market value minus, perhaps, if you will. That is, they will consider market value, but given other factors, perhaps market value would not be required.

And again, we would be happy to look at the legal issues here and the legal interpretations. I would point you to also page 4 of the same document, the policy statement, which uses another term, "best economic value." There is not too much description of that. Best economic value for the department "in light of the depart-

ment's identified objectives and needs." Again, not clear what that means.

What is clear, I think, is if the Congress were to make that technical amendment and for example, put depleted uranium sales authority under 3112(d), which covers the Department's other inventories. That statute requires a couple of things. First, as you say, not less than fair market value, which is a relatively objective term without these qualifiers.

And then, of course, the other factors that the Department has to balance in terms of no adverse material impact and no endangering of the national security. So there are different regulatory schemes, and, as we said earlier, Congress gave more specific scrutiny in the '96 act.

Mr. STUPAK. So Congress should clarify which one we are looking at when we are talking about the depleted uranium?

Ms. SAWTELLE. We would certainly recommend that you consider that, yes.

Mr. STUPAK. I have no further questions for this panel. Anyone else? I will dismiss this panel. Thank you very much. Now I would like to call up our second panel of witnesses to come forward. On our second panel we have Mr. Rob Ervin, President, United Steel Workers Local 550 in Paducah, Kentucky, and Mr. Marvin Fertel, Executive Vice President at the Nuclear Energy Institute.

It is the policy of this subcommittee to take all testimony under oath. Please be advised that witnesses have the right, under the Rules of the House, to be advised by counsel during your testimony. Do either of you wish to be represented by counsel? Both have indicated not. We will begin with an opening statement from you. You may submit a longer statement for inclusion. Mr. Ervin, we will have you go first please, and then we will go to Mr. Fertel after you. You might want to pull that mike a little closer. I am having a little trouble hearing you. Is it on, the green light on there? OK.

[Witnesses sworn.]

STATEMENT OF ROBERT C. ERVIN, JR., PRESIDENT, UNITED STEEL WORKERS LOCAL 550, PADUCAH, KENTUCKY

Mr. ERVIN. Good morning. At the onset, I would like to take this opportunity to thank the chairman and the ranking member for conducting this hearing and for inviting me to testify.

Mr. Chairman, distinguished committee members, my name is Rob Ervin, and I am president of the United Steel Workers, USW, Local 550 at the Paducah Gaseous Diffusion Plant in Paducah, Kentucky. There are nearly 900,000 active members in the USW International Union, and I represent almost 800 of these members at the site of our Nation's last operating uranium enrichment facility.

Briefly stated, there are approximately 40,000 depleted uranium or tail cylinders stored at the Paducah plant and over 20,000 at the closed facility in Portsmouth, Ohio. Until recently, these tails were considered to be a waste product and an environmental liability.

However, due to historic increases in the price of uranium, the circumstances have now changed. For well over a year now, I have been working with plant management, community leaders, and our

congressional delegation to develop a responsible strategy for re-enrichment of tails at the Paducah plant. My efforts are not exclusive to my responsibilities as a union official. They occur in a broader context as a member of the plant workforce and of the local community. Whatever happens to the Paducah plant affects both hourly and salaried employees alike and thus affects the community as a whole.

When we examine the tails issue in its simplest terms, there are certain elements that are undeniable. First, there are tails inventories at Paducah and Portsmouth that now have considerable worth. Their total value is dependent on market conditions and other variables, but they do have significant value at today's market prices.

Secondly, re-enrichment of tails requires an enrichment plant. Until such time as another facility becomes operational, the Paducah plant is the only domestic facility where this re-enrichment activity can occur.

Last but not least, failure to extract the value from these tails because of indecisiveness within DOE or concerns over past issues related to the United States Enrichment Corporation, USEC, defies all logic and reason.

Simply put, we now have a unique opportunity at our disposal, one that we need to take advantage of. I firmly believe that a contract can be devised that meets DOE policy goals, that is fair to USEC, and serves the best interest of the taxpayer.

The Department of Energy, DOE, recently released their much-anticipated policy statement on management of their excess uranium inventory. This statement acknowledges what we have known for quite some time, and that is, in light of the significant increases in uranium prices, tails have now become a valuable commodity.

However, the policy statement is written in generalities and provides no clear determination as to how or if DOE plans to proceed with tails re-enrichment or any timeframe in which this action would begin.

Absent DOE direction, this much is known: Paducah has the only near-term domestic capability for re-enrichment of tails. Waiting for another domestic facility to come into existence incorporates an unnecessary risk of value reduction and loss of potential revenue.

As the only remaining domestic enrichment facility, Paducah plays a key role in maintaining critical, national and energy security objectives. Continued operation of the Paducah plant is essential to an orderly transition to a more competitive and viable enrichment industry in the United States. And the re-enrichment of tails could help secure that future.

While the final determination of the policy direction resides with the DOE and Congress, the two most logical options are two that Paducah can perform without question. Tails can be re-enriched back to the level of natural uranium and introduced into the market at a rate that does not adversely impact the domestic uranium industry.

Tails can also be re-enriched to low-enriched uranium, LEU. This LEU could then be used to meet various DOE programmatic needs and could also be used to create a strategic uranium reserve. Con-

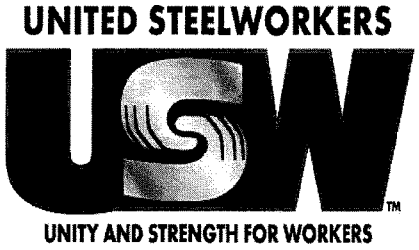
sidering our current levels of dependence on the Russians and other foreign suppliers, creating a strategic uranium reserve does make sense from an energy and national security standpoint.

The Paducah plant has the excess capacity to re-enrich tails at a controlled rate and the workforce necessary to perform this work safely and efficiently. The only thing missing is a clear path forward. House Resolution 4189, introduced by Representatives Whitfield and Smitt, represents what I believe to be a sound strategy for a responsible and timely re-enrichment program.

The USW strongly supports this legislation and is appreciative of their leadership efforts. The USW strongly opposes an auction system that results in the work being performed by foreign enrichers. Not only would this undermine the aforementioned policy objectives, it would also result in the outsourcing of highly skilled, good-paying U.S. jobs.

Mr. Chairman, this concludes my testimony, and I am happy to answer any questions that you may have.

[The prepared statement of Mr. Ervin follows:]



Testimony of

Robert C. Ervin, Jr.
President, Local 550
United Steelworkers

before the

House Committee on Energy and Commerce
Subcommittee on Oversight and Investigations

on

Selling the Department of Energy's Depleted Uranium Stockpile: Opportunities and Challenges

April 3, 2008

Testimony of
Robert C. Ervin, Jr.
President of United Steelworkers Local 550
Before the
House Committee on Energy and Commerce
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April 3, 2008

Before I begin this morning, I would like to take this opportunity to thank the Chairman and the Ranking Member for conducting this hearing and for inviting me to testify.

Mr. Chairman, distinguished committee members, my name is Rob Ervin, and I am President of United Steelworkers (USW) Local 550 at the Paducah Gaseous Diffusion Plant (PGDP) in Paducah, Kentucky. By way of background, there are 850,000 active members in the USW International Union, and we are North America's largest industrial union. I personally represent almost 800 members that are involved in uranium enrichment; environmental remediation; infrastructure; and depleted uranium conversion activities at the site of our nation's last operating uranium enrichment facility.

Briefly stated, there are approximately 40,000 depleted uranium or "tails" cylinders stored at the Paducah plant site. In addition, there are over 20,000 cylinders stored at the closed enrichment facility at Portsmouth, Ohio. Until recently, these cylinders were considered to be a waste product and an environmental liability to the local community. In fact, Public Laws 105-204 and 107-206 were championed by Senator Mitch McConnell and enacted by Congress. Those laws require the Department of Energy (DOE) to build two conversion facilities -- one at Paducah and one at Portsmouth -- to dispose of these cylinders and eliminate this liability.

However, due to market conditions and the renewed world-wide interest in nuclear power, the circumstances have now dramatically changed.

For well over a year now, I have been working with local plant management, community leaders, and our Congressional delegation in developing a strategy for the re-enrichment of tails at the Paducah plant. Let me be clear that my efforts in this matter are not exclusive to my responsibilities as a union official. They occur in a broader context as a plant worker, and as a long standing resident of my community. Whatever happens to the plant not only affects my USW constituency, it affects the entire plant workforce and the community as a whole. As such, I feel a sense of responsibility to also speak on behalf of the salaried workers at the plant who contribute to our success and who would otherwise have no voice.

When we strip away the extraneous matters from this issue, and examine it in its simplest terms, there are some elements that I believe all interested parties can agree on.

First, there are tails inventories at both the Paducah and Portsmouth sites that now have considerable worth. Their total value is dependent on market conditions and other variables, but these inventories now have tremendous value at today's market prices, which follows the rise in commodity prices.

Secondly, re-enrichment of the tails in these cylinders requires an enrichment plant. Until such time as the United States Enrichment Corporation (USEC) deploys its new American Centrifuge Plant (ACP) in Portsmouth, Ohio, or another domestic facility becomes operational,

the Paducah Gaseous Diffusion Plant is the only "near term" facility in this country where re-enrichment activities can take place.

Last, but certainly not least, failure to extract monetary value from these tails while the market conditions provide such an opportunity -- whether from indecisiveness within DOE, differences over process and contracting, concerns over past issues related to the USEC, or the quagmires of the bureaucratic process as a whole -- defies all logic and reason.

On March 13, 2008, DOE released their much anticipated Policy Statement on the management of the Department's excess uranium inventory. This statement acknowledges that in light of the significant increases in uranium prices, the depleted uranium stockpiles have now become a very valuable commodity both in terms of their monetary value, and the role they can play in achieving DOE missions and maintaining a healthy domestic infrastructure. However, the statement provides no clear and concise determination as to how DOE plans to proceed with a tails re-enrichment program or any definitive time-frame in which this action would commence. Absent DOE direction, this much is known: Paducah has the only "near term" domestic capability to re-enrich these tails. Waiting for another domestic facility to come into existence incorporates an unnecessary risk of value reduction and the potential loss of revenue to the United States Government.

It is worthy to note that, even though Paducah operates at a relatively high cost of production because of first generation technology, this 50-plus year old facility is still performing very well. The USW workers have been instrumental in helping increase plant

efficiency and last year's productivity reached an all-time high. As such, our facility is still fully functional, and more than capable of re-enriching tails for our government.

The Paducah Gaseous Diffusion Plant has survived major challenges and is still facing new challenges. We survived the startup of privatization, and the Russian HEU Agreement that shifted almost half of the U.S. market for enriched uranium to the Russians and caused the shutdown of our sister plant at Portsmouth. We have survived increasing rates for electric power but we are still facing potential unfair trade, particularly from the Russian Government and as a result of a U.S. Court of Appeals decision that threatens to undermine the new antidumping suspension agreement between the U.S. and Russian governments.

The Paducah plant now plays a key role in maintaining critical U.S. national and energy security objectives, and the continued operation of this plant is critical to achieve an orderly transition to a more competitive and viable enrichment industry in the U.S. Performing the re-enrichment of the tails for DOE would help secure that future. Shifting this potential business to overseas enrichment plants could undermine all of those objectives. And from a strictly human point of view, this action would seem to be grossly unfair to the Paducah workers whose efforts were instrumental in helping this country win the "Cold War".

While the final determination of the policy direction resides with DOE and the Congress, the two most prominent options that are available today are two that the Paducah plant can readily perform without limitation:

(1) The tails can be re-enriched back to the level of natural uranium (0.711) weight percent and be introduced back into the market at a rate that does not have an adverse impact on the domestic uranium industry. The proceeds from these sales can be deposited into the appropriate accounts, and can then be used to offset the continuing costs of remediation activities at the Paducah plant, and decontamination and decommissioning at the Portsmouth, Ohio and the Oak Ridge, Tennessee facilities.

(2) The tails can be re-enriched up to the level of Low Enriched Uranium (LEU). This LEU could then be used to ensure an adequate supply of material is always available to meet various DOE programmatic needs and to support the energy security of this nation through the maintenance of a strong domestic enrichment industry. LEU could also be used to create a Strategic Uranium Reserve. We have a Strategic Petroleum Reserve that can be accessed when the need arises, and it seems to me that given our current levels of dependence on the Russians and other foreign suppliers, a Strategic Uranium Reserve makes good sense from an energy and national security standpoint.

If I were given the opportunity to present a "perfect world" operational scenario before this Committee, it would be this: I would advocate that the tails cylinders remain at the Paducah site in their present condition, and only be re-enriched after the conclusion of our present commercial enrichment operation (currently projected to be 2012). That plan would extend operations of the plant and assure jobs for our members beyond 2012. Unfortunately, I cannot make that argument in good faith. The price of uranium may decline by that time, and the current value of the tails to the government and the taxpayer would be lost. However, I would

anticipate that if we start now to re-enrich the tails at a realistic and carefully controlled rate, we would still be doing so by the year 2012.

In conclusion, let me say that we have a unique opportunity at our disposal and that I firmly believe a contract can be devised that meets DOE policy goals that is fair to the Paducah plant operator and that serves the best interests of the government and the taxpayers. House Resolution 4189, introduced by Representatives Whitfield and Schmidt, represents what I believe is a sound legislative effort to achieve a fiscally responsible and timely re-enrichment program. The USW strongly supports this legislation, and is very appreciative of their leadership efforts.

The USW strongly opposes an auction system that would result in work being outsourced to foreign enrichers. Not only would this action result in the outsourcing of highly-skilled, good paying U.S. jobs, but it would also undermine national policy objectives, and impact our energy and national security by furthering our dependence on foreign sources of energy.

Mr. Chairman, this concludes my testimony. And I am happy to answer any questions that you may have.

Mr. STUPAK. Thanks Mr. Ervin. Mr. Fertel, your opening statement please, sir.

STATEMENT OF MARVIN S. FERTEL, EXECUTIVE VICE PRESIDENT, NUCLEAR ENERGY INSTITUTE

Mr. FERTEL. Thank you, Mr. Chairman, Ranking Member Shimkus, Mr. Whitfield, Mr. Barton. I appreciate the opportunity to appear today and to provide this testimony regarding selling the Department of Energy's depleted uranium stockpiles.

As you have already heard, the increased focus on nuclear plant deployment in the U.S. and worldwide has also resulted in a significant increase in the price of uranium. In just the last 2 years, since March 2006, the long-term price of uranium has gone from $41 to $95 a pound. The increase in uranium prices has stimulated planning for expansion of existing mines and major planning for and development of new uranium mines worldwide, including in the U.S.

It also provides a meaningful opportunity for the sale of depleted uranium tails from the DOE enrichment program. In this regard, we understand that the current DOE stockpile of depleted tails is about 40 million pounds of G2308U equivalent at greater than .3 percent G2235U. At projected long-term uranium prices at between 70 and 90 pounds, these tails have a potential value of $2.8 to $3.6 billion in the commercial market.

Still more lower assay material may prove economical for re-enriching as well, increasing the potential return to the government. While recognizing that not all of the tails may be readily re-enriched for sale in the commercial market, it seems clear that the market could use additional supply and that the government could gain significant value by the sale of tails for re-enrichment, a situation that was not commercially viable as recently as three years ago.

NEI surveyed its utility members regarding potential interest in purchasing tails for re-enrichment, and this is a little update on the numbers that we submitted in my testimony because we got one more in. Of the 15 companies that responded, 7 companies representing 61 generating units indicated they would or could be possibly interested in such purchases. Eight companies were not.

With regard to the definition of a program for re-enrichment of DOE tails and their sale into the commercial marketplace, we suggest the following characteristics. While it is likely market conditions will support the re-enrichment of tails and the sale of uranium into the market over a long period of time, the program should begin as soon as practicable to provide experience with and greater certainty for the commercial market as well as revenue to the government.

The sale for re-enrichment by a buyer desiring a uranium supply or the sale by DOE of uranium resulting from contracting for re-enrichment services should be done in a way that does not undermine the deployment of new uranium mines and conversion facilities in the U.S. In this regard, the aggregate disposition of U.S. surplus nuclear fuel should not exceed about 10 percent of the annual demand in the U.S.

Given the limited domestic enrichment capacity between now and the post-2013 time period, government contracting for re-enrichment of tails should avoid adversely affecting re-enrichment supply to the commercial market.

Four, the government should consider auctions for a portion of the tails being re-enriched until approximately 2020 should also contract for enrichment services from USEC for the re-enrichment of tails that will ultimately be sold into the market by DOE.

Five, if the U.S. government determines that a domestic enrichment facility is necessary for national defense purposes and that the existing Paducah facility is required for those purposes, the exclusive use of the facility over the longer term for the re-enrichment of tails would likely entail a national security premium that should not be allowed to artificially impact prices in the commercial market.

And six, the revenue received by the government associated with the sale of tails for re-enrichment or uranium derived from re-enriched tails sold by DOE should be dedicated to the GDP D&D fund if required to make up the deficits in the fund.

I thank you for the opportunity to participate in the hearing and look forward to your questions.

[The prepared statement of Mr. Fertel follows:]

STATEMENT OF MARVIN S. FERTEL

The Nuclear Energy Institute (NEI), on behalf of the nuclear energy industry, appreciates the opportunity to provide this testimony regarding "Selling the Department of Energy's Depleted Uranium Stockpile: Opportunities and Challenges."

NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plants designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry. NEI's members are the commercial entities that have purchased enriched uranium services from the Atomic Energy Commission, the Department of Energy, and from USEC since its inception.

Nuclear energy currently supplies 20 percent of our Nation's electricity supply, and is America's largest source of clean-air, carbon-free electricity, producing no greenhouse gases or other air pollutants. Nuclear energy accounts for 71 percent of the Nation's clean-air electricity generation. In 2006, U.S. nuclear plants prevented the discharge of 681 million metric tons of carbon dioxide into the atmosphere. This is nearly as much carbon dioxide as is released from all U.S. passenger cars. The industry is committed to maintaining the benefits of nuclear energy to benefit the United States and the world.

Because of the growing need for additional baseload electricity in the United States, nuclear generating companies have already submitted nine license applications. We estimate that at least another five applications will be made this year. This could result in 15–20 new operating nuclear plants in 2020, an additional 20GW–25GW of generating capacity.

In addition to the deployment of new enrichment facilities, the increased focus on new nuclear plant deployment in the U.S. and worldwide has also resulted in a significant increase in the price of uranium. Since March 2006, the spot and long-term price for uranium has risen from $41.00/lb and $41.00/lb respectively, to $71.00/lb and $95.00/lb, respectively, in March 2008. The increase in uranium prices has stimulated planning for expansion of existing mines and major planning for and development of new uranium mines worldwide, including in the U.S. It also provides a meaningful opportunity for the sale of depleted uranium tails from the DOE enrichment program to entities that see the value of re-enriching them for sale in the uranium market. In this regard, we understand that the current DOE stockpile of depleted tails is about 40 million pounds of G2308U equivalent at greater than 0.3%

G2235U. At projected long-term uranium prices of between $70/lb and $90/lb, these tails have a potential value of between $2.8B and $3.6B in the commercial market.

Still more lower-assay material may prove economical for re-enriching as well, increasing the potential return to the government. While recognizing that not all of the tails may be readily re-enriched for sale in the commercial market, it seems clear that the market could use some additional supply and that the government could gain significant value by the sale of the tails for re-enrichment, a situation that was not commercially viable as recently as 3 years ago. NEI surveyed its utility members regarding potential interest in purchasing tails for re-enrichment. Of the 14 companies that responded, six companies representing 53 generating units indicated that they would or possibly would be interested in such purchases. Eight companies representing 25 units said they would not be interested.

With regard to the definition of a program for the re-enrichment of DOE tails and their sale into the commercial marketplace, we suggest the following characteristics:

(1) It is likely market conditions will support the re-enrichment of tails and the sale of uranium into the market over a long period of time. However, the program should begin as soon as practicable to provide experience with and greater certainty for the commercial market as well as revenue to the government;

(2) The sale of tails for re-enrichment by a buyer desiring uranium supply, or the sale by DOE of uranium resulting from contracting for re-enrichment services, should be done in a way that does not undermine the deployment of new uranium mines and conversion facilities in the U.S. In this regard, the aggregate disposition of U.S. government surplus nuclear fuel should not exceed 10 percent of the annual demand in the U.S.;

(3) Given the limited domestic enrichment capacity between now and the post-2013 time period, government contracting for re-enrichment of tails should avoid adversely affecting enrichment supply to the commercial market;

(4) The government should consider auctions for a portion of the tails being re-enriched, but until approximately 2020, should also contract for enrichment services from USEC, for the re-enrichment of tails that will ultimately be sold into the market by DOE;

(5) If the U.S. government determines that a domestic enrichment facility is necessary for national defense purposes, and that the existing Paducah facility is required for those purposes, the exclusive use of the facility over the longer-term for the re-enrichment of tails would likely entail a national security premium that should not be allowed to artificially impact prices in the commercial market; and

(6) The revenue received by the government associated with the sale of tails for re-enrichment, or uranium derived from re-enriched tails sold by DOE should be dedicated to the GDP—D&D fund, if required to make up the deficits in the fund.

NEI appreciates the opportunity to provide this perspective to the subcommittee and would be happy to answer any questions you may have.

Mr. STUPAK. Thank you, Mr. Fertel. We will begin questions. Mr. Ervin, let me ask you. Your testimony endorsed H.R. 4189, Mr. Whitfield's bill, which would direct DOE to contract with USEC as a sole source basis to re-enrich tails and to conclude the deal within 120 days. Given that there is no ceiling on the fees that USEC could demand from DOE and DOE has given no alternative but to conclude a deal with USEC, do you believe the taxpayers would be able to derive full and fair value from the tails under this agreement?

Mr. ERVIN. Yes, I do. The legislation represents what we thought was a sound strategy at the time that the legislation was crafted. Now, that doesn't mean to say that the legislation could not be tweaked, that we could not modify those time parameters, but——

Mr. STUPAK. So you just like the idea that we are going to be moving this and doing something quickly?

Mr. ERVIN. If we do not put some type of time limitation on this matter, we will be having this same discussion next year.

Mr. STUPAK. And I know that you have sat through the first part of this hearing too. What about the idea of auctioning some, at the same time, taking a little closer look at USEC doing it, doing part

of it because 14 percent a year is the most you can do at Paducah, right?

Mr. ERVIN. Those numbers, I believe, would be subject to interpretation and debate. Without knowing the particulars of an auction-type contract, I would not want to basically comment. I will say that the Russians—I believe we do not have a 123 agreement that is required by the Atomic Energy Act of 1954.

Mr. STUPAK. That is true, but there would be nothing that would prevent DOE in asking about taking bids to see if Russia or France was interested, as long as the uranium was enriched here in the United States. They could still be a bidder. There would be another opportunity to get competition in to get the fair market value for the taxpayer, right?

Mr. ERVIN. That is correct, but if in an auction scenario that we enrich the tails at Paducah, then utilities would essentially become a middleman. And that obviously would eradicate some of the benefit to the government.

Mr. STUPAK. OK, H.R. 4189 also calls for depositing the proceeds of the tails enrichment into your D&D fund. That is for decontainment and decommission, right?

Mr. ERVIN. Decontamination and decommissioning.

Mr. STUPAK. So why wouldn't this money then just be available to go back to the Treasury and other important government functions?

Mr. ERVIN. We have to have source of revenue for decontamination and decommissioning, D&D, at both the uranium enrichment facilities. The money has to come from somewhere. This looks like a good opportunity to provide that source of revenue.

Mr. STUPAK. Sure, but your D&D fund, the authorization for it ran out in October of last year, right?

Mr. ERVIN. That is correct.

Mr. STUPAK. So technically the government couldn't transfer money into it if it is not authorized to do so.

Mr. ERVIN. I believe it could be reinstated and——

Mr. STUPAK. Sure.

Mr. ERVIN [continuing]. The money therefore transferred into it.

Mr. STUPAK. OK, as part of reauthorization, should the tax on utilities, which covers about one-third of the annual contributions, also be extended?

Mr. ERVIN. I do not have the necessary background and am not——

Mr. STUPAK. OK.

Mr. ERVIN. I am not privy to that type of information where I could answer that type of question.

Mr. STUPAK. OK, Paducah plant is 50 years old, thereabouts, and it is currently in good operating order. I know when I was down there, it looked like it was doing well. Is it able to continue operations though past 2012, or is the plant maintenance such that reliable operations past 2012 would be questionable, as USEC runs its plant to its expected end of its economic life?

Mr. ERVIN. Yes, what we would have to do is request that USEC take a look at their projected operating lifespan on the plant and start initiating programs and infrastructure repairs that will allow the facility to continue operation past 2012.

Mr. STUPAK. Well, let me ask you this. USEC's future is pegged to the commercial successes of its advanced centrifuge technology, which is planned for the Portsmouth, Ohio facility. What actions do you believe the government should take in the event USEC is unable to commercialize its advanced centrifuge technology?

Mr. ERVIN. My primary responsibility is to the membership of the USW at the Paducah Gaseous Diffusion plant. What happens with respect to USEC's ability to deploy their ACP project is out of my ability to influence and really out of my area of concern. If it happens, it happens. If it doesn't, it doesn't. My primary objective is to continue to look at ways to keep the gaseous diffusion plant that we currently have in operation without being overly preoccupied about what if we are going to do with one that might be built at some point later.

Mr. STUPAK. OK. Mr. Fertel, does NEI support H.R. 4189?

Mr. FERTEL. We do not at this time.

Mr. STUPAK. OK, do you believe DOE should offer some of its tails for auction in the near term?

Mr. FERTEL. Actually, in my testimony, Mr. Chairman, I offered that I thought we needed to deal with Paducah as a primary source and also go up for auction. Most of the auction discussion that you just had talked about foreign auctions. We are deploying new enrichment facilities in this country.

Mr. STUPAK. Sure.

Mr. FERTEL. And at least my understanding is all three of the companies that are looking to deploy them, one that is already under construction, would be interested in hearing about auctions, which would be in out years.

Mr. STUPAK. Right.

Mr. FERTEL. And as I already found out, utilities are interested, and I appreciate Rob's comment on being a middleman. But they may also have a lot more leverage in dealing with actually the only enricher in town for doing a deal because they continue to do business with them.

Mr. STUPAK. So utilities would really have more leverage than maybe DOE then, right?

Mr. FERTEL. They might.

Mr. STUPAK. OK, and then I believe I alluded to some testimony earlier. You have 53 of your 103 members who indicated an interest.

Mr. FERTEL. I updated it. Sixty-one plants right now would either say yes or they would like to at least be considered for it.

Mr. STUPAK. OK, so about 60 percent, then. What was the response from your members? Were they interested in this? I mean if you have 103 members, did they all respond? I know you got 63 affirmative in some. Did the others respond?

Mr. FERTEL. Yeah, we got about 70 percent of the industry to respond. It was a pretty quick turnaround.

Mr. STUPAK. How much time did you have?

Mr. FERTEL. I think it was about 48 hours.

Mr. STUPAK. OK, and you got 70 percent response in 48 hours. We wrote a letter on February 14, 2007. We are still waiting for even a request for information from DOE. That is amazing. OK, if DOE were to auction tails, would the industry support a DOE re-

striction on exporting these tails overseas for re-enrichment, or do you want that as a competitive option or——

Mr. FERTEL. I think our members would want it as a competitive option is what I would think. But to the question on Paducah, we need Paducah to keep operating.

Mr. STUPAK. Sure.

Mr. FERTEL. Let us be very clear about that, and I don't understand even a 2012 date because even if the American Centrifuge is deployed, I expect whatever utilities sign contracts for it will want to be certain that there is a backup source until it operates commercially for a while. And Paducah is the most obvious backup source for a USEC deployment of even a new technology.

Mr. STUPAK. Sure, and, as Mr. Ervin pointed out, even if we did allow Russia or France to compete, we would still want those things reprocessed here in the United States also from a security point of view. But if they competed for price, they could also help leverage, could they not, a higher price?

Mr. FERTEL. Potentially. It would give DOE information. It would at least help you get some better information.

Mr. STUPAK. As to a base for——

Mr. FERTEL. Yes, sir.

Mr. STUPAK. OK, what is the basis for the joint industry position that sales of DOE excess uranium inventories not exceed—and you mentioned this in your opening—10 percent of the U.S. market? Wouldn't a floor price be a more economically rational way to ensure that DOE does not flood the market and destroy business investment in mining or conversion?

Mr. FERTEL. Yeah, it is very hard at NEI to deal with fuels issues with our membership because, as you can imagine, we have both the sellers and the buyers. And putting aside, making sure we don't get into any sort of antitrust or anti-competitiveness——

Mr. STUPAK. Right.

Mr. FERTEL [continuing]. Issues, we never talk price. So we always talk in terms of policies that the government could be looking at. And the compromise that we ended up with—in every discussion, Mr. Chairman, you hear the same thing. The utilities would say the numbers should be much bigger, and the suppliers, wherever they are in the supply chain, will always say the numbers should be much smaller.

Mr. STUPAK. Right.

Mr. FERTEL. And after a lot of good discussion, we end up with something that everybody could compromise. So it is not analytical.

Mr. STUPAK. Well, let me ask this, and then my time is up. I want to ask one more question if I may. Turn to tab 4. It should be right there in your exhibit—I am sorry, tab 1, slide 4, which shows the domestic mining production is about 10 percent of the total amount of uranium consumed by U.S. utilities. And there it is right there. Given the large amount of imports and a weak dollar that we see right now, isn't it likely that DOE sales of depleted uranium would tend to displace imports rather than displace domestic mining operations?

Mr. FERTEL. The thing from my experience, Mr. Chairman, is that what the market needs is certainty. And if they get certainty,

they can plan their projects. I am going to our fuel conference next week, and I will hear what people are projecting.

Last October when I went, uranium mines were talking about growing to about 10 million pounds in this country. And what they need to be able to do that and make the investments in the business decisions is know what is happening, not only in the other competitive markets, but what the government might do.

So I think if you do what you do with certainty, they may not like the number, but they can plan around it and make good decisions. So I am not answering your question directly because I am not sure I know what it would displace, but I can tell you the behavior you would see on the commercial side is that the more certain the DOE could make what they are doing, the better off everybody is for knowing how they can make their decisions.

Mr. STUPAK. OK, I have no further questions of this witness. Mr. Shimkus, please.

Mr. SHIMKUS. Thank you, Mr. Chairman. I don't want to get back into our previous debate, but I do like the e-mail that I read, if we——

Mr. STUPAK. Sure, in the—sure.

Mr. SHIMKUS [continuing]. File it in the record. Yeah, I appreciate it.

Mr. STUPAK. The e-mail of August 6, 2007 will be made part of the record.

Mr. SHIMKUS. Thank you.

Mr. STUPAK. You had referenced it earlier for the record.

Mr. SHIMKUS. Thank you. I am a supply guy so I understand your debate. What I would say for the consumer at the end, we want more supply of everything so that we have lower cost. Mr. Ervin, how would your local—and I need to come to your facility, and you know I am right across the river. I have been to Metropolis a couple times, so you probably have some members who live in my district I would imagine.

Mr. ERVIN. I do represent quite a few of your constituents.

Mr. SHIMKUS. How would your local view a proposal, either by legislation or by the DOE, to send tails to Russia or France to reprocess?

Mr. ERVIN. We would be diametrically opposed to such an action. Those are our direct competitors, and I might add that those competitors are either government owned or government subsidized. And we are forced to compete with them as a private entity.

Mr. SHIMKUS. Wouldn't you agree that also for issues of national security, the growth of nuclear power in this country again, the growth of new high-paying jobs, encouraging new processing facilities—I know you would like to be the sole one—but for the country, the encouraging of reprocessing in this country is the way we should go?

Mr. ERVIN. Absolutely. We need to be promoting a viable and healthy domestic enrichment industry.

Mr. SHIMKUS. And I want to follow up on your statement. You advocate that DOE should hold off enrichment of its depleted uranium inventories until after 2012, when the plant plans to close. After 2012, re-enrichment of the depleted tails could keep the plant open. However, if we wait until 2012, isn't there a risk that the

price of uranium will come back down to a level where it is no longer economic to re-enrich?

Mr. ERVIN. Yes, sir. That was my perfect world scenario that obviously doesn't exist.

Mr. SHIMKUS. Well, sometimes we think it exists here until 2012 comes around, or something like that.

Mr. ERVIN. According to the UX Consulting Company, who is an industry participant, in January of 2006, uranium feed prices were at $35 a pound. In June of 2007, they were $135 a pound. In January of 2008, they were $75 a pound. So we see a significant increase in a very short period of time, and there is concrete data that reflects that.

Based on those types of fluctuations, I would be hard-pressed to tell you that a logical and realistic option would be for us to sit on the tails at Paducah, where they have been for 50 years and no one wanted to take them off our hands when they weren't worth anything. That there would still be sufficient value to sit on them in that manner. That is just not a guarantee that I can make. I would love to be able to do that because then my facility could enter into a re-enrichment activity at the conclusion of our commercial enrichment activity. But I don't have a crystal ball, and I can't make that assumption in good faith.

Mr. SHIMKUS. Great. Thank you. Mr. Fertel, in your testimony, you note that if DOE decided to auction the depleted uranium, eight utilities representing 25 nuclear reactors would not be interested in purchasing the completed tails. Considering their value in today's uranium market, why would so many utilities skip an auction of this material? I mean simply put, why?

Mr. FERTEL. Yeah, I didn't talk to them directly, Congressman Shimkus.

Mr. SHIMKUS. Well, go talk to them and find out.

Mr. FERTEL. But the way individual buyers and companies look at things, one, they may have already built up inventory and they are not looking for things right now. Two, there are some utilities that would just as soon not deal with the government because it is too hard. So there could be a number of business decisions as to why those don't. What I think is interesting is if you look at the numbers that wanted, it is large fleets. And I think that is because large fleets can deal with diversity of supply and manage the risk of dealing with different suppliers better. That is my guess. I honestly didn't look at the details, and I didn't call them directly myself.

Mr. SHIMKUS. No, and I am just teasing you. The last question I have, Mr. Chairman, for Mr. Fertel. In your statement, you indicate that DOE should contract exclusively with USEC until 2020 for re-enrichment of depleted uranium. And we already talked about the sole debate. But come 2013, USEC may not be the sole opportunity. Should DOE also offer LES, New Mexico, 2013, Arreva, and GE sometime in the future the opportunity to re-enrich some of the depleted uranium if these companies build enrichment facilities here in the U.S.?

Mr. FERTEL. Absolutely, and the statement in my testimony indicated that, while they should do that, they should also auction a

portion. And to be honest, I would see more being auctioned as you get out in the other facilities.

NEI is in a strange place in some of these discussions because we try to look at the whole industry, and no one wants LES, Arreva, GE, USEC to succeed more than we do. But the only operating facility right now and the only one that is on the move towards operation are USEC and LES. And if the others don't get up, we need this one to keep operating, not only to get rid of tails but to supply fuel to 104 reactors.

So parochially, I want to maintain some security supply domestically for as long as I can, until I know I have enough diversity.

Mr. SHIMKUS. Well, and I am there too. I just think the issue is 2020 versus 2013. I think you have got some folks in your industry who are not pleased with the 2020.

Mr. FERTEL. And I think they should get some through the auctions, and I think that if I were DOE, I might actually auction more with time, as there are more options.

Mr. SHIMKUS. And I guess we would follow up why the auctions and not through the contract?

Mr. FERTEL. Well, if you only had a couple, maybe what you would do is do sole sources with a couple. But if you had four or five, you ought to auction.

Mr. SHIMKUS. Well, we are only going to have—by 2013, hopefully we will have two. Well, hopefully two. They are saying maybe three, but maybe two.

Mr. FERTEL. OK.

Mr. SHIMKUS. I yield back. Thank you, Mr. Chairman.

Mr. STUPAK. Thank you, Mr. Shimkus. Mr. Barton for questions please.

Mr. BARTON. Thank you. I think I will start off with our NEI witness. And I didn't read your opening testimony. Does it take a position on this GAO question of the DOE's legal authority to auction or sell the depleted uranium tails? Do you all have——

Mr. FERTEL. No, we didn't take any position on the legal issues, but I think that seemed to be vetted pretty well during the discussion, but we did not take a position.

Mr. BARTON. OK, I wasn't here for the first panel, but it would assume to be that the Department of Energy would have the authority to do that because depleted uranium is a form of uranium. And we clearly give DOE the authority under certain terms and conditions to sell uranium, which I would think would extend to various configurations of uranium, including depleted mine tailings, which would be my position if the committee decides to take a position on it.

Mr. FERTEL. I know, Mr. Barton, that you and I are both engineers, and we would think logically. But that is a legal thing, and I never find that the way I think is the way they think.

Mr. BARTON. Right. Luckily, though, it is the engineers who solve the problems. My friend from the union, does your group take a position on just a pure auction? Yes, sir, you.

Mr. ERVIN. Yes, sir. We are opposed to a pure auction.

Mr. BARTON. And why is that?

Mr. ERVIN. Well, without knowing the particulars, we would assume that the utilities would be interested in acquiring the mate-

rial and then shipping it overseas for enrichment. That would equate to the outsourcing of our jobs.

Mr. BARTON. OK, I understand that. That is not an illogical position. But we have something that was a problem, and now it is an asset. It would seem that we would want to get maximum value for that.

Now, I want to ask a question to the chairman, which is a little unusual. If we were to do an auction, could the proceeds of that be used in budget reconciliation to offset other areas in our committee's jurisdiction, like Medicaid? I mean——

Mr. STUPAK. That is——

Mr. BARTON. Are you enough of an expert on the CBO and the budget reconciliation outfits?

Mr. STUPAK. Since it came out of our committee, we would have hopefully some jurisdiction on where it went, unlike Mr. Doyle who suggested it, then went somewhere else. And I don't know. He hasn't been back. He's the only one who had an answer to that.

Mr. BARTON. Well, when I was chairman and we did a budget reconciliation package, my recollection is that if it was in the committee's jurisdiction, we——

Mr. STUPAK. That is——

Mr. BARTON [continuing]. Could use it——

Mr. STUPAK [continuing]. The precedent we are using.

Mr. BARTON [continuing]. Within any area of our jurisdiction because the famous—let us have another spectrum auction. We could always do a spectrum auction——

Mr. STUPAK. Correct.

Mr. BARTON [continuing]. And then use that to offset some of our health issues, which is that would seem to me that this is a kind of gift from the gods if we can satisfy Mr. Whitfield's concerns, that $7 to $10 billion could go a long way in helping on the doctor fix and the physician and some of those issues.

Mr. STUPAK. If we did the legislation which GAO says we need, and I know you may think that—and DOE says they thought they had the authority. But if we just did those three letters and define what value we are going to use, or reasonable value or whatever it is, then we would have to put in there the exception to the Miscellaneous Receipts Act. And then, therefore, the Committee would have jurisdiction over the proceeds generated from that.

Mr. BARTON. OK.

Mr. STUPAK. So the key words would be the exception to the Miscellaneous Receipts Act.

Mr. BARTON. OK, and my last question. I believe you said in your testimony that you want the Paducah plant to stay open. Is there a timeframe on how long?

Mr. FERTEL. Well, I think that is going to be a decision by USEC and others. But my feeling, Mr. Barton, is that right now we are deploying new facilities, and we do want them to succeed. But Paducah is our only reliable source of domestic capability until LES is up and fully operational and Arreva and GE do their thing. I don't honestly see how you could shut the plant down in 2012 even if ACP is successful, in all honesty.

And the other facilities aren't at full capacity until somewhere in the 2012 to 2015 timeframe, if they are successful. So I would love

to see the plant continue to operate. My arbitrary date was at least to 2020 doing something.

Mr. BARTON. OK, and this last question is for both of you. The staff memo indicates that USEC is in some financial distress. Could you all comment on that if it is true? Now, I may have misread the memo.

Mr. ERVIN. Well, obviously I am not a corporate executive officer so a lot of that information would be business confidential. I will tell you that the recent revised estimates of their American Centrifuge Plant over the past year have escalated from $1.8 billion to $2.3 billion and now stand at $3.5 billion. I cannot imagine any scenario whereby that is going to prompt investors to line up around the corner to join the team.

In conjunction with that, the stock price has taken a considerable nosedive within the past few weeks, and basically the timeframe paralleled the recent announcement of re-revised cost estimate for ACP.

I would not consider USEC to be the most financially viable corporation that trades on the stock exchange.

Mr. BARTON. So primarily it is just the cost overruns of its new plant. Is that a fair statement?

Mr. ERVIN. I would have no way of knowing exactly. I would imagine you could credit it in more than one area if you wanted to be generous.

Mr. BARTON. OK. Mr. Fertel?

Mr. FERTEL. I don't have any insight specifically to USEC, Mr. Barton. But just on the rise in the cost of the ACP, we are clearly seeing that across the board on every project because of commodity prices going up, particularly steel and everything else. So we are seeing it on all the new nuclear plants, wherever they are.

And the other thing that we are finding, again independent of the USEC ACP, is that the more engineering we get done, the better the price, not only the better but always the higher the price—seems to be because we are finding that companies get smarter. So I would think that some of what has happened with the ACP are commodity prices. And they are doing engineering.

Mr. BARTON. The new plant doesn't have the capacity that the existing plant does.

Mr. FERTEL. That is correct.

Mr. BARTON. Interesting. OK, thank you, Mr. Chairman.

Mr. STUPAK. Page 6 of our committee briefing memo indicates the financial situation on page 6 there, and it indicates USEC has a CCC credit rating as it is facing large costs, increases and schedule slippage in that new centrifuge plant that you mentioned. And it is seeking government loan guarantees for the project. It is on page 6 there of our briefing memo.

Mr. BARTON. It just seems funny that we privatized the facility or corporation, and it is the sole domestic corporation. And it is already in financial trouble. You would think if you give them almost a natural monopoly and protect them—and I am not throwing stones at Mr. Whitfield's workers because I know how solid they are. But it would seem that it ought to be thriving as the nuclear industry revives, is appearing to do so. It just doesn't seem to make sense.

Mr. STUPAK. I am sure Mr. Whitfield wants to jump in on this one.

Mr. WHITFIELD. No, I——

Mr. STUPAK. Yes, go ahead, Mr. Whitfield. Your time for questions.

Mr. WHITFIELD. No, I——

Mr. STUPAK. Mr. Barton, you still have a few more minutes. But go ahead back and forth if you want. Go ahead.

Mr. BARTON. Yes, I will yield.

Mr. WHITFIELD. Well, I am not going to get into any financial discussion of USEC because I don't have all the information. But I think everyone would agree that the gentleman within DOE who was the biggest advocate for privatizing subsequently became the chairman of USEC. So he was a government employee, and then he moved there. And I must say that during his tenure, there were lots of questions raised about his effectiveness as a manager.

Mr. BARTON. Is he still there?

Mr. WHITFIELD. He is no longer there, and the new management, I must say, has improved dramatically. I think Rob Ervin would agree with that and everyone else on The Hill that has had experience with him would agree with that. I do know that their electrical costs are unbelievably high, and they are always trying to negotiate lower costs with TVA.

But one question that I would——

Mr. STUPAK. Let me just jump in there if I may. Go to slide number 8, Kyle. This is one of the slides we had again in the briefing. This is USEC and then U.S. mine production. That is one of the things we are concerned about in the certainty we need because USEC dumped uranium they received from the government. And you see what it did to mining. So these sales infused a lot of cash into USEC during that period of time, which was 2000 to 2005. But then after that, it is a hit-and-miss type of situation. That is one of the concerns that we have. But it is in the briefing memo, and it is tab number 8 if you care to look at it.

Sorry, Mr. Whitfield, questions. We will give you——

Mr. WHITFIELD. Yeah, and I don't know, Mr. Barton, if you have ever seen that picture there at the bottom. That is approximately 40,000 canisters at Paducah, and each one of those canisters weighs about 14 tons. And so what this reprocessing would do would certainly help to clean that up and to extend the life of the USEC plant, which is important for my parochial interest, but also it is important, I think, from the national interest because, as Mr. Fertel said, it is good to have more than one enricher within the country. Right now, we only have USEC. We do expect another one to be coming online in New Mexico in the not-too-distant future.

But, Mr. Fertel, let me ask you a question. I know you don't support my legislation, but do you think legislation is necessary? I get the impression that we could be sitting here next year, and the Department of Energy still would not have this solved. And if we have legislation directing maybe a combination auction, reprocessing at Paducah, we certainly could put in some protections. Even if you just did reprocessing at Paducah, you could put in protections to guarantee more of a competitive price. I mean there are things that could be done on that front.

But just from a perspective without regard to H.R. 4189, do you think legislation is necessary to address this or not?

Mr. FERTEL. I think legislation could, on a couple of fronts, potentially be very helpful. One is what, I think, seems to frustrate everybody sitting up there, is how long it takes, and legislation may stimulate action faster. And that is good.

And going to my certainty statement, if legislation provided some certainty on timing of what is coming and how much, I think that helps everybody that is trying to work this issue no matter what their perspective is. They may not like everything exactly the way it is, but it allows them to deal with it. It is the uncertainty that hurts, which could hurt the country and Paducah if we don't know what is happening and you get bad decisions. So I wouldn't dismiss legislation as a good vehicle, Mr. Whitfield, to both get things going and to try and provide more certainty to all the players in the field.

Mr. WHITFIELD. Well, recognizing, of course, that this committee is not a legislative committee, but it certainly does focus on important issues. So I am hopeful that as a result of this hearing that maybe we could—and Ranking Member Shimkus could maybe use H.R. 4189 or come up with another bill that could help us address this and speed this issue along so we can try to take advantage of some of these prices.

And, Mr. Ervin, thank you very much for your leadership on this issue. You have done a tremendous job not only in Paducah but up here working on the issue, and we appreciate your time and effort very much.

Mr. ERVIN. Thank you.

Mr. STUPAK. I thank the gentleman, and we do have votes on the floor. We have about 8 minutes left. I have no further questions. Any further questions, Mr. Shimkus? Then I will dismiss this panel and thank them for their testimony today. And I am sure you will see legislative action on this matter. That concludes our questioning. I want to thank all of our witnesses for coming today and for your testimony. I ask unanimous consent that the hearing record will remain open for 30 days, for additional questions for the record. And I know Mr. Dingell had asked for time to put this one response from Mr. Spurgeon. So we will hold it open for that. So without objection, the record will remain open. I ask unanimous consent that the contents of our document binder be entered into record. No objection, documents will be entered into record, and the documents you suggested, Mr. Shimkus. That concludes our hearing. Without objection, the meeting of the subcommittee is adjourned.

[Whereupon, at 12:33 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

STATEMENT OF HON. JOE BARTON

Mr. Chairman, thank you for holding this important hearing. The Department of Energy has a vast inventory of uranium that is worth potentially tens of billions of dollars. Significant increases in the price of uranium over the past few years have meant that even the Department's stockpile of depleted uranium—recently considered a waste to be buried-is now a valuable asset.

Indeed, what was once considered a waste is now a treasure, and we want to ensure that the Department is getting the most value from these new riches.

The Department recently finalized its policy to determine how much uranium should be kept in its stockpile and how much could be sold or transferred to support the Department's missions and maintain a healthy domestic nuclear infrastructure.

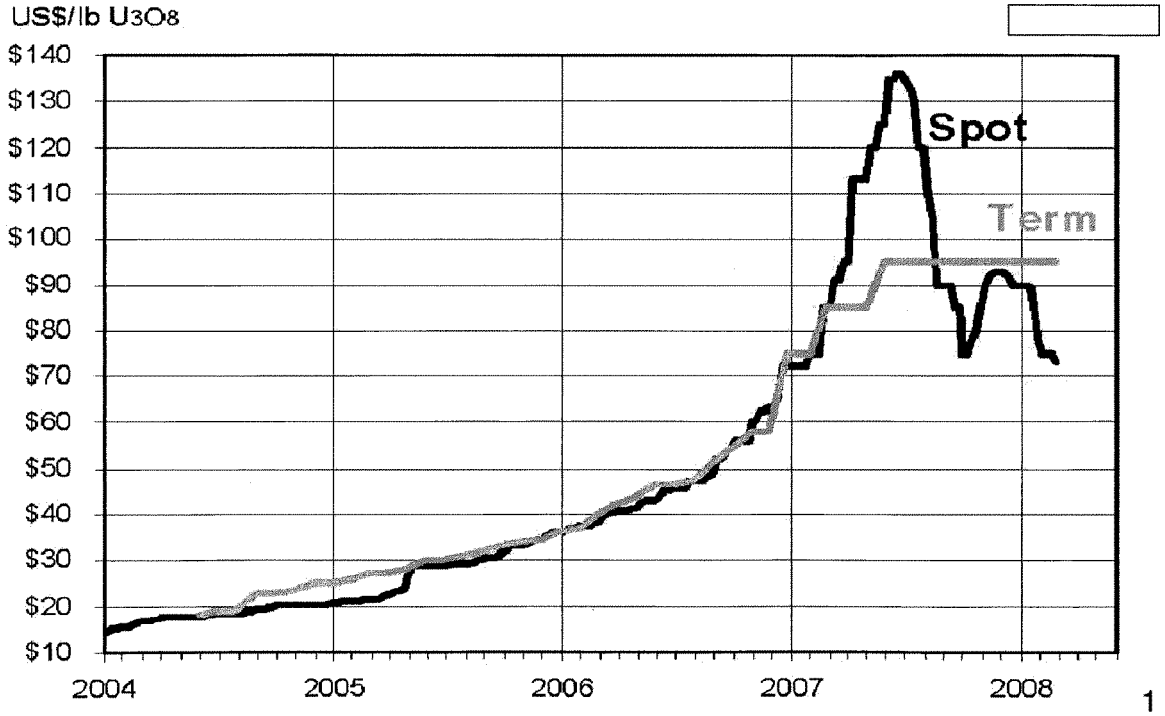
There may be a desire by some to act quickly and convert these uranium inventories to dollars while the price of uranium is high, but we must consider what impact any government sale may have on the viability of the domestic uranium mining industry. If DOE floods the market with its uranium, it could drive down the price of uranium and discourage any investment in domestic uranium infrastructure. At the same time, the taxpayer deserves to benefit from the sale of this asset. Maybe we could even generate enough new income to afford a tax cut.

I am encouraged that the nuclear industry has come together to develop a consolidated proposal on how DOE can sell some of its inventories without disrupting uranium markets. I hope the Department will pay close attention to their proposal.

It seems to me that DOE should first focus its attention on finding a way to sell or transfer the depleted uranium we have in inventory. Most of this material is stored at the Paducah Site in Representative Whitfield's district in Kentucky. I think Representative Whitfield may already have some good ideas on how to manage these materials.

I thank the Chairman and I yield back.

Uranium Prices 2004-2008
Spot U_3O_8 Price and Long-Term U_3O_8 Price

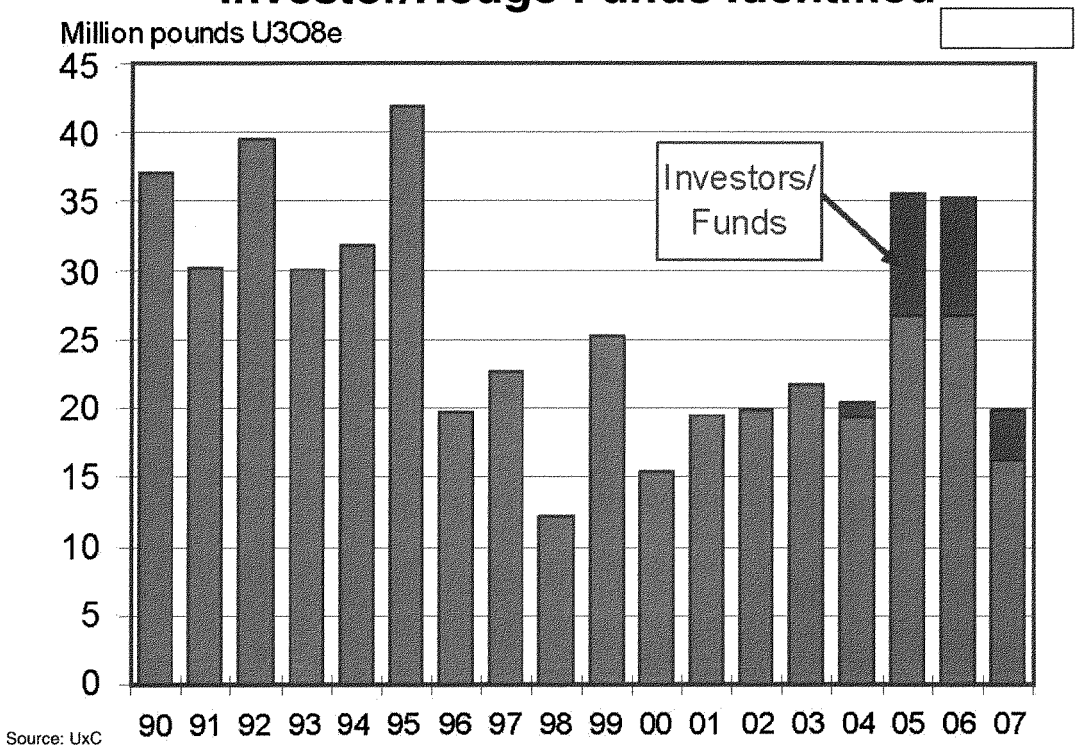


Source: UxC

1

U308 Spot Volumes 1990-2007

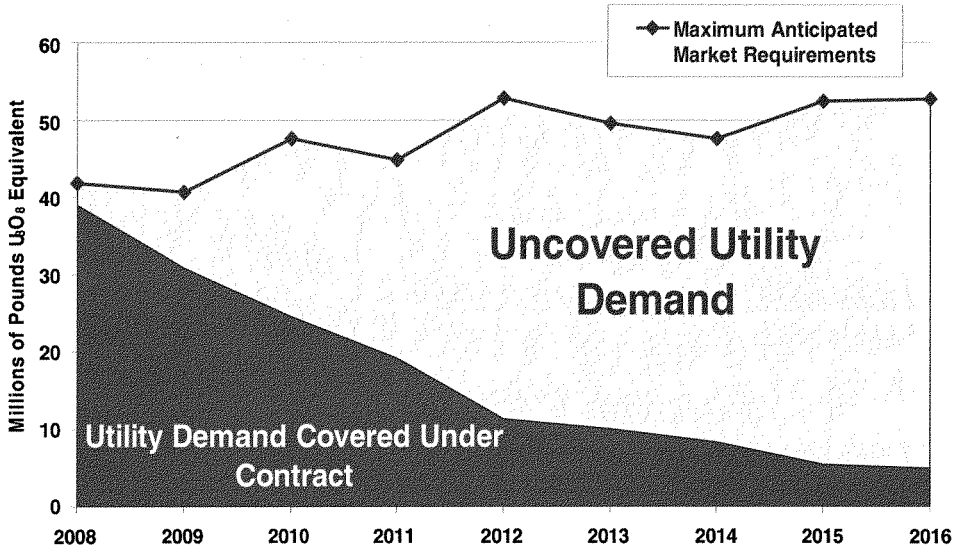
Investor/Hedge Funds Identified



Source: UxC

2

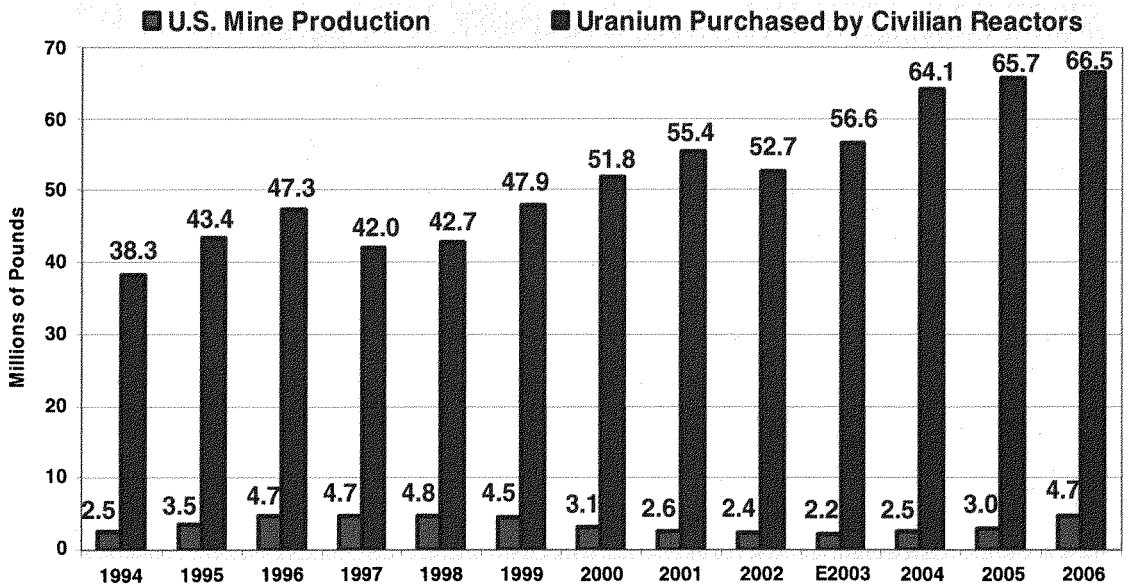
Uncovered Demand for Uranium
U.S. Civilian Nuclear Reactors
2008-2016



Source: EIA Form EIA-858 "Uranium Marketing Annual Survey" (2006)

E= values estimated

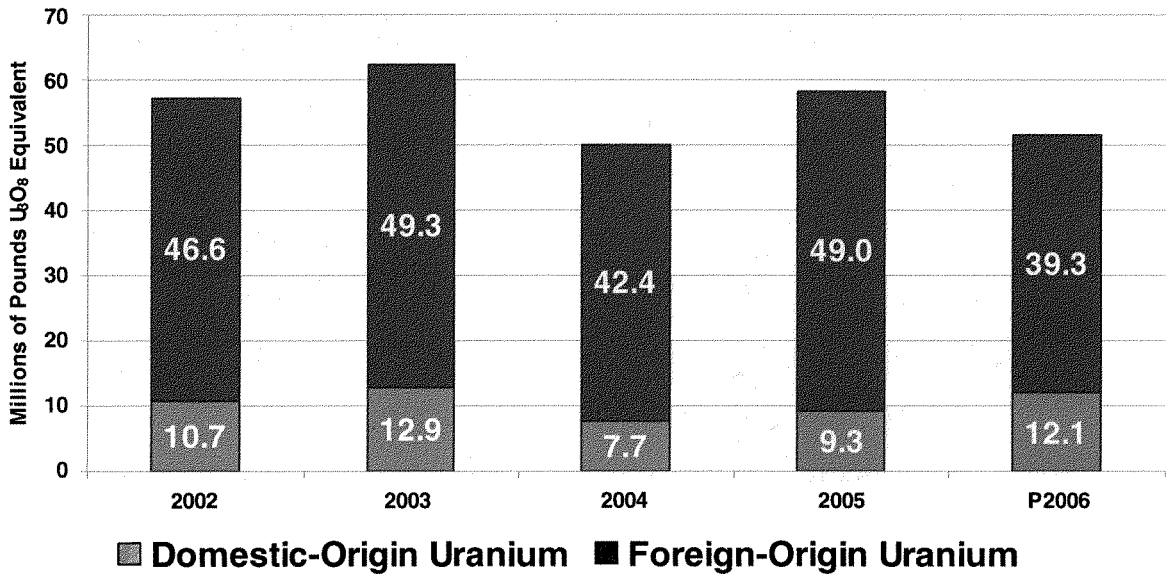
U.S. Uranium Mine Production vs. Uranium Purchases by U.S. Civilian Reactors 1994-2006 (Millions of Pounds)



E = Estimated data.
Sources: Energy Information Administration: 1993-2002-Uranium Industry Annual. 2003-2006-Domestic Uranium Production Report

Domestic vs. Foreign Uranium Loaded into U.S. Civilian Nuclear Power Reactors

Millions of Pounds (2002-2006)



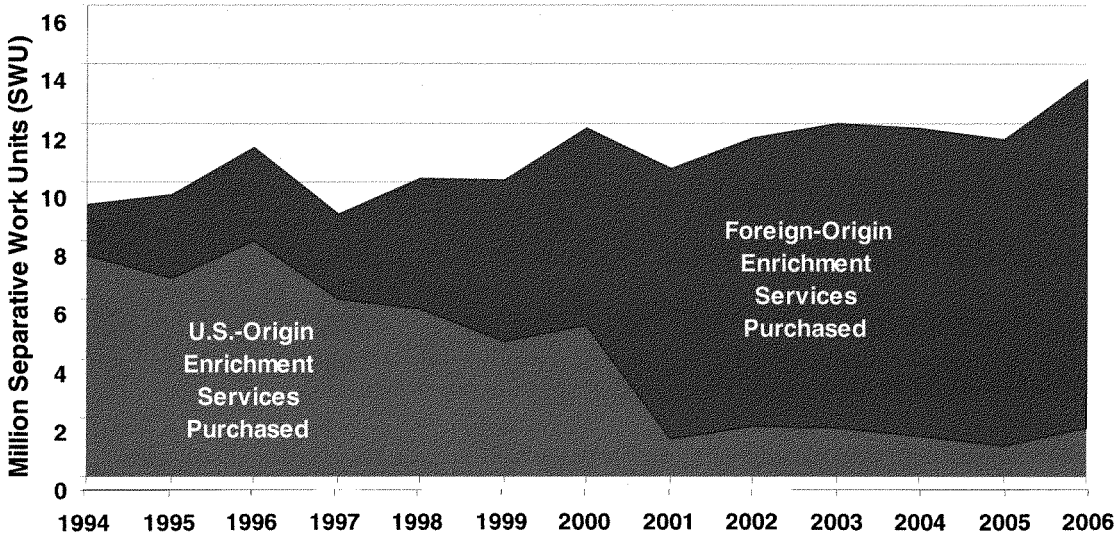
P = Preliminary data. Final 2004 fuel assembly data reported in the 2005 survey.

Source: Energy Information Administration, Form EIA-858 "Uranium Marketing Annual Survey" (2003-2006).

Email from Mr. Spurgeon to the DOE-GC David Hill on a Sole Source Contract Proposal by Energy Solutions and USEC- 9/16/06

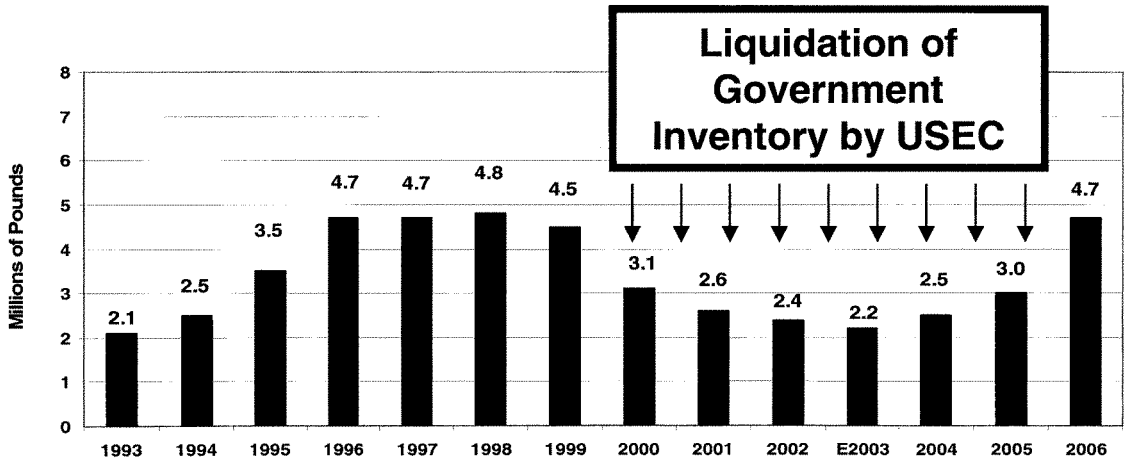
"We are about to have a USEC train wreck that could have serious side effects for nuclear energy in the U.S. Like it or not, DOE is involved. Whether or not we can prevent the train wreck is questionable, but I believe we must try our best."

Foreign vs. Domestic Uranium Enrichment Services Purchased for U.S. Civilian Nuclear Power Reactors 1994-2006



Sources: Energy Information Administration: 1994-2002-Uranium Industry Annual. 2003-2006-Uranium Marketing Annual Report.

U.S. Mine Production of Uranium 1993-2006 (Millions of Pounds)



E = Estimated data.
Sources: Energy Information Administration: 1993-2002-Uranium Industry Annual. 2003-2006-Domestic Uranium Production Report

Hill, David R.

From: Spurgeon, Dennis
Sent: Monday, August 06, 2007 4:52 PM
To: Hill, David R.
Subject: Re: ES Proposed Transaction

I am travelling Monday and Tuesday. From what I can see on my BB this issue may be just too hard to tackle in our remaining 17 months.
Let's talk on Wednesday.

----- Original Message -----
From: Hill, David R.
To: Spurgeon, Dennis
Sent: Mon Aug 06 12:23:32 2007
Subject: ES Proposed Transaction

Dennis - Attached is a draft of our analysis of the proposed Energy Solutions - USEC transaction. Maybe after you've had a chance to review this, we can get together to discuss. Thanks. drh

<<ES Proposed Transaction 8-6-07.doc>>

FINAL

SCHEDULE FOR CLAY SELL
Friday, April 20, 2007

8:00 AM **DEPART RESIDENCE EN ROUTE DOE**
8:30 AM Met by Lee Morris

8:45 AM **DROP-BY RFAEA MEETING**
9:15 AM 5A-118

11:00 AM **MEETING WITH DR. RICHTER**
11:30 AM Deputy Secretary's Office

12:00 PM **LUNCH WITH MIMI ALEMAYHOU & KYLE**
1:00 PM **KELHOFER**
BCB

3:00 PM **MEETING WITH STEVE CREAMER & TIM BARNEY**
3:30 PM **(ENERGY SOLUTIONS)**
Deputy Secretary's Office
Attendees: Deputy Secretary; Spurgeon, Dennis; Rispoli, James; Ingols, Adam; Merchant, Brent (Required); Kinsey, Nell; Henderson, Janine; Brooks, JoeAnn; Triay, Ines (Optional)

4:00 PM **PRE-BRIEF FOR MEETING WITH SECRETARY**
4:30 PM **CHERTOFF**
Secretary's Office
Attending: Sell, Kupfer, D'Agostino
Attendees: S1 Schedule

4:30 PM **MEETING WITH DEPUTY SECRETARY SELL AND JIM**
5:00 PM **SLUTZ**
Secretary's Office
Attending: Sell, Kupfer, Slutz
Attendees: S1 Schedule

Egger, Mary

From: Egger, Mary
Sent: Saturday, May 12, 2007 8:00 AM
To: Owendoff, James
Subject: Re: USEC

The end of May was not in the conversation I was in, but I do understand Dennis wants it evaluated as a priority. Ines was in the last few mtgs, so I'm assuming you and she are working together on this? Murphie needs to get involved, but I still regard this as highly proprietary and on a need to know basis.

----- Original Message -----
From: Owendoff, James
To: Egger, Mary
Sent: Sat May 12 07:55:23 2007
Subject: Fw: USEC

Mary
I guess the heat is on. Jim Rispoli said David said you would have comments and/or recommendation by the end of May. I am working on the "business case" and if you have a few minutes wed morning would like to catch up.
Thanks
Jim

----- Original Message -----
From: Levitan, William
To: Schwartz, Doug
Cc: Triay, Ines; Owendoff, James; Iacaruso, Anita; Anderson, Charles E; Ott, Karen; Wnukoski, Karen
Sent: Fri May 11 18:32:59 2007
Subject: USEC

Doug - Nothing has gone to Dennis yet. Jim Rispoli has asked Jim Owendoff to evaluate the proposal and we developing a business case.

- Bill

-----Original Message-----
From: Levitan, William
Sent: Friday, May 11, 2007 3:25 PM
To: Triay, Ines; Iacaruso, Anita
Cc: Wnukoski, Karen
Subject: FW: USEC

Ines/Anita - what are the answers to Doug's question.

Thanks, Bill

-----Original Message-----
From: Schwartz, Doug
Sent: Friday, May 11, 2007 8:54 AM
To: Levitan, William
Subject: FW: USEC

Bill - what's the status of this? Did something go to Dennis yet? If so, can you pls get me a copy? Thx

D

-----Original Message-----
From: Levitan, William On Behalf Of Rispoli, James
Sent: Tuesday, May 08, 2007 10:56 AM
To: Sell, Clay

Cc: Rispoli, James; Anderson, Charles E; Triay, Ines; Merchant, Brent; Spurgeon, Dennis; Schwartz, Doug; Hill, David R.
Subject: RE: USEC

Clay - Jim is still out sick. Ines is taking the lead for EM. We will run our proposed response through Dennis on its way to you. We expect to get Dennis our input tomorrow COB. We will support Dennis in coordination with General Counsel.

- Bill

William Levitan
Executive Officer
Office of Environmental Management

-----Original Message-----
From: Sell, Clay
Sent: Monday, May 07, 2007 7:35 PM
To: Spurgeon, Dennis; Hill, David R.; Rispoli, James; Triay, Ines
Cc: Kupfer, Jeffrey
Subject: FW: USEC

Can someone suggest how I should respond to this proposal from Energy Solutions? CS.

-----Original Message-----
From: Kim Longhurst [mailto:klonghurst@energysolutions.com] On Behalf Of Steve Creamer
Sent: Monday, May 07, 2007 4:01 PM
To: Sell, Clay
Subject: USEC

<<DD 2 13 07.doc>> <<graph 1 (3)2 13 07.doc>> <<Uranium Transfer Agreement draft 2 13 07.doc>> <<LEASE USEC 2-13 07.doc>> <<Parent Guaranty Appendix 4 2 13 07.doc>> <<Post Closing 2 13 07.doc>> <<Pre-Closing Structure 2 13 07.doc>>

Clay - I appreciated the opportunity to meet with you, Dennis and Ines to discuss EnergySolutions' proposal to amend the USEC lease. As we discussed, we think that it is important to the country to have a domestic uranium enrichment capacity and I believe that we have developed a plan to ensure this result. At the same time, the Department and the taxpayers would benefit from the cost savings from our proposed cleanup plan at Portsmouth and Paducah.
I look forward to hearing back from the Department on our proposal. I have attached a copy of the proposed revised lease documents for your convenience.
Thank you.
Steve

Egger, Mary

From: Owendoff, James
Sent: Monday, June 11, 2007 2:15 PM
To: Egger, Mary
Subject: FW: Restricted: Cleanup of Portsmouth and Paducah - Restricted and Proprietary Information

Mary
And this is the one Jim sent up.
Jim

>_____
>From: Rispoli, James
>Sent: Thursday, May 24, 2007 5:30 PM
>To: Spurgeon, Dennis; Schwartz, Doug
>Cc: Triay, Ines; Levitan, William; Owendoff, James; Hill, David R.
>Subject: RE: Restricted: Cleanup of Portsmouth and Paducah - Restricted and Proprietary Information
>
>Hello Dennis -
>
>I am forwarding Jim Owendoff's email concerning the proprietary proposal concerning cleanup at the Portsmouth and Paducah.
>
>In summary for you, at a high level, our analysis based upon our reliable cost estimates, is that this appears to be a workable deal. Additionally, we have commissioned the Corps of Engineers to evaluate our analysis in more detail; specifically we want to look at our assumptions, any unknowns that could affect the deal, and issues that still need to be resolved. We anticipate that we will have preliminary views in NLT the first week of June, and a report by mid-June.
>
>As you know, I am here tomorrow and then out to Hanford all next week. We can connect tomorrow (Friday) to discuss if you like, or I can call you from there. Additionally, Jim Owendoff is also available for EM to stay plugged in.
>
>Please let me know if you need more at this time.
>
>Thanks
>Jim
>
>James A. Rispoli, P.E.
>Assistant Secretary of Energy
>Office of Environmental Management
>Washington, DC
>
>
>_____
>From: Owendoff, James
>Sent: Thursday, May 24, 2007 2:34 PM
>To: Rispoli, James
>Cc: Triay, Ines; Levitan, William
>Subject: INFORMATION: Cleanup of Portsmouth and Paducah - Restricted
>and Proprietary Information
>
>Jim
>It appears the proprietary estimate for $9.5B and our EM estimate of around $16.1B for above grade work appear to be for roughly the same kind of work. However, at this level of detail and with the cost difference, it is difficult to ensure the scope is aligned. The proprietary estimate indicates permanent removal from the site of equipment, buildings and waste. From my analysis of the costs and scope, I feel comfortable in recommending to you that we should proceed with the next step to be able to compare scopes of work. But, I think we would need the legal analysis of the proposed revisions to the lease completed before we would proceed, because it may be necessary to have some "sole source" understandings. Also, I have included our estimate for Below Grade as information, even

>
>Below Grade $2.5 $2.8
>
>
>
>Issues:
>- disposal location for classified material
>- access to below grade contamination with certain facilities still
>being utilized by ACP
>- what would the proprietary estimate be for accomplishing the Below
>Grade scope
>- what type of bond/insurance would the Government have should the
>company terminate services
>- would pension and benefit liabilities of current and retired workers
>also transfer
>- how would the Government's CERCLA liability be mitigated
>
>The work I am having done by the Corps is for us to understand what is in our estimate and the "soft" spots in the estimate for Portsmouth. We will do the same for Paducah and then the two DUF6 plants. The plan is to have a good outline for Portsmouth by next week and the report by mid Jun. Then I would estimate the entire analysis by the end of Jun. This would really be supporting our next step in trying to compare more detailed estimates. At this time, all I have is the single figure for the estimate of what we are considering.
>
>Trust this helps. Jim

Dove, Leisa

From: Miotla, Dennis
Sent: Wednesday, August 08, 2007 12:06 PM
To: Dove, Leisa
Subject: FW: USEC

-----Original Message-----
From: Levitan, William
Sent: Thursday, May 24, 2007 1:07 PM
To: Miotla, Dennis
Cc: Owendoff, James
Subject: RE: USEC

Thanks Dennis for letting me know. When I sent my email below, I was not fully informed on what was happening. I have now been "read in." Jim R is engaged and has seen the emails below. As you are aware he has assigned Jim O as the lead. I spoke with Jim O this morning, who has also been in dialogue with Jim R. EM understands that we will work this expeditiously and will provide as accurate analysis as we can. We also understand, as you note, that GC has the lead on the contractual issues.

- Bill

William M. Levitan
Executive Officer
Office of Environmental Management
202-586-7357

-----Original Message-----
From: Miotla, Dennis
Sent: Thursday, May 24, 2007 8:50 AM
To: Levitan, William
Subject: FW: USEC

I have been working this issue for Dennis Spurgeon within NE. No one else in NE is involved and it should stay that way. Dennis Spurgeon is on leave, he contacted me this morning and elaborated on this note. If you need any assistance from NE please contact me. As we last left this with GC and EM (Egger and Owendoff), EM did not believe that the plan proposed by Energy Solutions could be adequately assessed without additional information that would require an extensive commitment of recourses from ES. Moreover, the issue of this being a sole source was raised repeatedly.

-----Original Message-----
From: Spurgeon, Dennis
Sent: Thursday, May 24, 2007 7:26 AM
To: Miotla, Dennis
Subject: Fw: USEC

Please push this to resolution!

----- Original Message -----
From: Spurgeon, Dennis
To: Rispoli, James; Hill, David R.
Sent: Thu May 24 07:22:19 2007
Subject: Fw: USEC

See Clay's message. We need to come to closure on whether or not we want to pursue the Energy Solutions proposal and whether it is feasible to execute, subject to getting the needed additional cleanup appropriations.

Young, Loretta

From: Spurgeon, Dennis
Sent: Thursday, May 24, 2007 10:34 AM
To: Rispoli, James
Subject: Fw: USEC

See David's note and question. We really need your position on how best to put this together.

----- Original Message -----
From: Hill, David R.
To: Spurgeon, Dennis; Rispoli, James
Cc: Egger, Mary
Sent: Thu May 24 10:24:39 2007
Subject: RE: USEC

The ES/USEC proposal is being evaluated right now by a whole army of GC attorneys with respect to all of the various legal issues it presents (e.g., procurement, environmental, Privatization Act, appropriations, cleanup compliance, lease, etc.). Mary Egger is field marshalling this effort. My instruction to the group was to evaluate the proposal as presented, but to think about alternatives for aspects of the proposal that appear to be non-starters from a legal, practical, or good business sense perspective. Jim, I don't know whether EM is doing any independent analysis of this proposal at this point.

-----Original Message-----
From: Spurgeon, Dennis
Sent: Thursday, May 24, 2007 7:22 AM
To: Rispoli, James; Hill, David R.
Subject: Fw: USEC

See Clay's message. We need to come to closure on whether or not we want to pursue the Energy Solutions proposal and whether it is feasible to execute, subject to getting the needed additional cleanup appropriations.

----- Original Message -----
From: Sell, Clay
To: Rispoli, James
Cc: Anderson, Charles E; Triay, Ines; Merchant, Brent; Spurgeon, Dennis; Schwartz, Doug; Hill, David R.
Sent: Wed May 23 23:17:37 2007
Subject: RE: USEC

Has the Department given any response to the sender re this matter? CS/

-----Original Message-----
From: Levitan, William On Behalf Of Rispoli, James
Sent: Tuesday, May 08, 2007 10:56 AM
To: Sell, Clay
Cc: Rispoli, James; Anderson, Charles E; Triay, Ines; Merchant, Brent; Spurgeon, Dennis; Schwartz, Doug; Hill, David R.
Subject: RE: USEC

Clay - Jim is still out sick. Ines is taking the lead for EM. We will run our proposed response through Dennis on its way to you. We expect to get Dennis our input tomorrow COB. We will support Dennis in coordination with General Counsel.

- Bill

William Levitan
Executive Officer
Office of Environmental Management

Young, Loretta

From: Rispoli, James
Sent: Friday, May 25, 2007 6:39 PM
To: Triay, Ines
Cc: Owendoff, James; Levitan, William
Subject: FW: USEC

Ines -

Dennis Spurgeon and I spoke just now, and he has the lead on this to reply to Clay. Charlie should not be engaged, at least until further notice.

He has the email Jim O. wrote and I forwarded, and is good for now. He knows the next step would be for "us" to work with Mary Egger to nail down the specifics in any agreement, going forward. He is still wanting to move quickly.

Thx
Jim

James A. Rispoli, P.E.
Assistant Secretary of Energy
Office of Environmental Management
Washington, DC

-----Original Message-----
From: Sell, Clay
Sent: Wednesday, May 23, 2007 11:18 PM
To: Rispoli, James
Cc: Anderson, Charles E; Triay, Ines; Merchant, Brent; Spurgeon, Dennis; Schwartz, Doug; Hill, David R.
Subject: RE: USEC

Has the Department given any response to the sender re this matter? CS/

-----Original Message-----
From: Levitan, William On Behalf Of Rispoli, James
Sent: Tuesday, May 08, 2007 10:56 AM
To: Sell, Clay
Cc: Rispoli, James; Anderson, Charles E; Triay, Ines; Merchant, Brent; Spurgeon, Dennis; Schwartz, Doug; Hill, David R.
Subject: RE: USEC

Clay - Jim is still out sick. Ines is taking the lead for EM. We will run our proposed response through Dennis on its way to you. We expect to get Dennis our input tomorrow COB. We will support Dennis in coordination with General Counsel.

- Bill

William Levitan
Executive Officer
Office of Environmental Management

-----Original Message-----
From: Sell, Clay
Sent: Monday, May 07, 2007 7:35 PM
To: Spurgeon, Dennis; Hill, David R.; Rispoli, James; Triay, Ines
Cc: Kupfer, Jeffrey
Subject: FW: USEC

Can someone suggest how I should respond to this proposal from Energy Solutions? CS.

-----Original Message-----
From: Kim Longhurst [mailto:klonghurst@energysolutions.com] On Behalf Of Steve Creamer

Merchant, Anne

From: Merchant, Anne
Sent: Thursday, May 31, 2007 4:54 PM
To: Kupfer, Jeffrey
Cc: Shaffer, Carrie; Getto, Ben
Subject: FW: USEC Meeting for S1

Ok to set up?

From: Ingols, Adam
Sent: Thursday, May 31, 2007 10:52 AM
To: Merchant, Anne; Shaffer, Carrie
Subject: USEC Meeting for S1

Anne and Carrie, I spoke to Jeff earlier this week about setting up a briefing for the Secretary on USEC issues. I think we should allot 30-60min sometime next week for this briefing. NE would be the lead with support from EM, CI, and GC. I recommend the following people:

S1
Sell
Kupfer
Spurgeon
Rispoli
Guith
Nicoll
Hill
Kolton
(others as determined by Spurgeon)

The purpose of the meeting would be to update the Secretary on USEC's interest in utilizing DOE's stockpile of uranium tails.

Thanks

Shaffer, Carrie

From: Sepehri, Leila
Sent: Friday, June 08, 2007 9:37 PM
To: Audi, Rachel; Shaffer, Carrie; Rispoli, James
Cc: Lough, Jean; Cuevas, Steven
Subject: Re: Please advise ..

Thanks Rachel! I just got confirmation from the front office that having Ines at the meeting will be sufficent. No need to do anything else.

The meeting attendees will remain the same: Sell, Kupfer, Spurgeon, Triay, Guith, Nicoll, Hill, Kolton, Egger

Thank you for your help!

----- Original Message -----
From: Audi, Rachel
To: Shaffer, Carrie; Sepehri, Leila; Rispoli, James
Cc: Lough, Jean; Cuevas, Steven
Sent: Fri Jun 08 20:48:54 2007
Subject: Re: Please advise ..

Thanks Carrie.

----- Original Message -----
From: Shaffer, Carrie
To: Audi, Rachel; Sepehri, Leila; Rispoli, James
Cc: Lough, Jean; Cuevas, Steven
Sent: Fri Jun 08 19:47:05 2007
Subject: Re: Please advise ..

Oops just saw this. Thx rachel-- per joeann, jim wanted to send triay.

----- Original Message -----
From: Audi, Rachel
To: Sepehri, Leila; Rispoli, James
Cc: Shaffer, Carrie; Lough, Jean; Cuevas, Steven
Sent: Fri Jun 08 19:21:29 2007
Subject: Re: Please advise ..

Leila,

Jim is out of town Monday (on leave) as well as Charlie Anderson. Steve Cuevas covers PPPO and I cover Oak Ridge for EM-1 and will connect with others Monday morning to make EM and a briefing available for them.

Rachel

----- Original Message -----
From: Sepehri, Leila
To: Rispoli, James
Cc: Shaffer, Carrie; Lough, Jean; Cuevas, Steven; Audi, Rachel
Sent: Fri Jun 08 19:05:11 2007
Subject: Please advise ..

Jim ---

On Monday, are you available to participate in a meeting with the Secretary at 3:30 p.m. -- USEC/Uranium tails update meeting.

Other attendees are as follow: Attending: Sell, Kupfer, Spurgeon, Triay, Guith, Nicoll, Hill, Kolton, Egger

Hill, David R.

From: Spurgeon, Dennis
Sent: Monday, August 06, 2007 4:52 PM
To: Hill, David R.
Subject: Re: ES Proposed Transaction

I am travelling Monday and Tuesday. From what I can see on my BB this issue may be just too hard to tackle in our remaining 17 months.
Let's talk on Wednesday.

----- Original Message -----
From: Hill, David R.
To: Spurgeon, Dennis
Sent: Mon Aug 06 12:23:32 2007
Subject: ES Proposed Transaction

Dennis - Attached is a draft of our analysis of the proposed Energy Solutions - USEC transaction. Maybe after you've had a chance to review this, we can get together to discuss. Thanks. drh

<<ES Proposed Transaction 8-6-07.doc>>

Dove, Leisa

From: Miotla, Dennis
Sent: Wednesday, August 08, 2007 10:43 AM
To: Dove, Leisa
Subject: FW: ES Proposed Transaction

Attachments: ES Proposed Transaction 8-6-07.doc

-----Original Message-----
From: Spurgeon, Dennis
Sent: Monday, August 06, 2007 4:41 PM
To: Miotla, Dennis; Rispoli, James
Subject: Fw: ES Proposed Transaction

Your comments/recommentation??

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From: Hill, David R.
To: Spurgeon, Dennis
Sent: Mon Aug 06 12:23:32 2007
Subject: ES Proposed Transaction

ES Proposed Transaction 8-6-07..

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United States Government Accountability Office
Washington, DC 20548

June 24, 2008

The Honorable John D. Dingell
Chairman
Committee on Energy and Commerce
House of Representatives

Subject: *Nuclear Material: Questions for the Record Related to the Department of Energy's (DOE) Options for Managing its Depleted Uranium Tails*

Dear Mr. Chairman:

On April 3, 2008, Mr. Robert A. Robinson, formerly Managing Director of the U.S. Government Accountability Office's Natural Resources and Environment team, accompanied by Ms. Susan D. Sawtelle, Managing Associate General Counsel, and Mr. Ryan T. Coles, NRE Assistant Director, testified before the Subcommittee on Oversight and Investigations, House Energy and Commerce Committee, at a hearing entitled, "Selling the Department of Energy's Depleted Uranium Stockpile: Opportunities and Challenges." This letter responds to questions for the record on this topic from Subcommittee Chairman Stupak, enclosed in your letter of May 8, 2008. The questions, along with our responses, follow, with the exception of responses containing confidential business information which are being provided under separate cover.

Questions from the Honorable Bart Stupak

1. **Given that over the next five years, the United States Enrichment Corporation (USEC) will have significant market power by running the Nation's only domestic uranium enrichment plant, would a sole source, cost reimbursement contract between DOE and USEC for re-enriching depleted uranium tails raise any business or contracting risks to the Government? Please identify the key business and contracting risks.**

Competition is a fundamental principle underlying the federal acquisition process. However, DOE's options for competitively contracting to re-enrich its depleted uranium are limited in the near term because USEC is currently the only domestic uranium enrichment company. As noted in our testimony, USEC and other companies are currently constructing or planning to construct additional enrichment plants in the United States that will use newer, lower-cost technology. However, these facilities are not expected to be completed until various times over the next decade.

Despite the fact that DOE may be limited to using one domestic contractor in the near term, the Federal Acquisition Regulation (FAR) provides sufficient guidance for DOE officials to use in awarding a sole source cost-reimbursement contract to protect the government's interests. For example, DOE contracting officers are required to ensure that DOE purchases services and supplies at fair and reasonable prices. FAR 15.402(a). Further, DOE contracting officers are required to conduct market research and analyze the cost elements of USEC's cost proposal. These protections apply to both a sole source and cost reimbursement contract.

In addition, we note that the use of a cost-reimbursement contract may represent some degree of cost risk, as the circumstances that call for its use are based upon uncertainties involved in contract performance which do not permit costs to be estimated with sufficient accuracy to use any type of fixed price contract. What remains uncertain at this point are the type and amount of USEC's costs that DOE may be required to reimburse. The major cost at USEC's Paducah enrichment plant is electrical power, which already is relatively expensive and which could cost more over time. To re-enrich DOE's depleted uranium, USEC would need to acquire additional electrical power during relatively expensive summer months, further increasing costs to DOE.

2. What options would GAO recommend to mitigate contracting and business risk?

In order to mitigate risks associated with entering into a sole source contract, DOE should take care to provide sufficient management attention to ensure that agency officials adhere to sound contracting principles and requirements as specified in the FAR. The FAR provides requirements not only for the award of contracts, but also for their administration. Contract administration is a key component in ensuring that contract costs and performance meet government needs. DOE should plan how it will administer a contract with USEC prior to awarding the contract. DOE also will need to ensure that it has the appropriate number of trained government acquisition personnel to monitor and administer this contract.

a. Should limits be placed on the duration of a contract?

The duration of government contracts already is limited both by general FAR requirements and by appropriation law principles. DOE contracting officials will need to balance the needs of the agency with the capacity and requirements of the contractor to determine the appropriate contract duration.

b. Should Congress put a statutory cap on maximum profits and/or fees that could be paid?

Under 41 U.S.C. § 254(b), Congress already has placed statutory caps on the amount of fee that can be reimbursed to a federal contractor. The amount of profit any contractor makes is not necessarily based on the amount of fee the government pays. Profit for a contractor may be less than the fee paid if the contractor has to use part of its fee to offset unallowable costs. Consequently, it is extremely difficult for the government to determine and limit a contractor's profit under a federal contract.

c. Should transparency measures be put in place for Congressional and GAO review of the contract prior to its final issuance?

In order to avoid potential concerns regarding GAO's independence under generally accepted government auditing standards to undertake future reviews of a government program or activity, for example in the form of an audit review or through exercise of GAO's bid protest function, it is GAO's policy to refrain from reviewing or commenting on an agency's Requests for Proposal or proposed contract terms, prior to award of a program's contract. Further, officials within the contracting agency, such as Inspector General officials, should be in the best position to understand the negotiating position of the agency and the agency's program requirements and personnel considerations. Inspectors General also have access to the types of information that would make pre-award review meaningful. To the extent Congress determines that pre-award review is appropriate for a contract between DOE and USEC, therefore, the DOE Inspector General may be in the best position to provide the type of review envisioned.

d. Are there other mechanisms for mitigating risk?

Additional risks can be mitigated to the extent DOE can appropriately define and communicate its requirements to USEC. The use of a cost-reimbursement contract generally indicates some degree of uncertainty regarding contract performance which limits the government's ability to accurately estimate costs to use a fixed price contract. Appropriately defining requirements is a way to reduce cost uncertainties and performance risk.

3. Given the Government's limited bargaining power, could business risk be mitigated by having DOE auction its high-assay uranium tails to utilities and let them negotiate with USEC to re-enrich the tails? Would the Government benefit more from contracting to re-enrich the tails and then selling the uranium? Please compare the risks and benefits of these two models.

As noted in our testimony, we believe DOE likely lacks authority to sell the tails in their current form because of specific statutory language in the USEC Privatization Act. However, if such authority were provided, auctioning the tails to utilities and letting them negotiate with USEC or other enrichment companies to re-enrich them is one potential option for the department to realize value from the tails.

Because the risks and potential benefits of DOE selling the tails in their current form versus contracting to re-enrich the tails and selling the resultant product cannot be well estimated, it is difficult to say whether one option is clearly superior to the other. If DOE chose to auction the tails in their current form (assuming it received necessary legal authority), utilities or other purchasers likely would discount their bids, perhaps steeply, to make buying the tails attractive compared with purchasing natural uranium on the open market. DOE might get a discounted price for the tails to compensate buyers for additional risks, such as rising enrichment costs or buyers' inability to obtain sufficient enrichment services. Whether this discount would be greater or less than the cost of DOE paying for re-enrichment itself is unknown and would depend upon the specific circumstances (*e.g.*, uranium prices and the costs of

enrichment services) at the time the auction occurred.

4. In your testimony, you recommend that DOE finalize its strategy for depleted uranium "as soon as possible." What is the urgency, and what are the costs of inaction?

We believe that the completion of DOE's strategy, in addition to obtaining the necessary legal authority, is an important step toward managing the department's depleted uranium as a valuable resource. As our testimony noted, uranium prices are extremely volatile and the value of DOE's tails is very sensitive to changes in uranium prices. For example, the value of DOE's tails has ranged from nearly worthless in 2000 to a high of over $20 billion in the summer of 2007, before falling to around $7.6 billion using February 2008 uranium prices of $200 per kilogram of natural uranium in the form of uranium hexafluoride.

Uranium prices and enrichment costs continue to fluctuate, making it all the more important for DOE to act quickly. For example, since our April 3 testimony, published enrichment prices have risen about 3 percent and uranium prices have fallen over 10 percent. This has resulted in a decrease in the value of DOE's tails. Using May 2008's published uranium price of $168 per kilogram and enrichment prices of $149 per separative work unit (the standard measure of uranium enrichment services), DOE's tails now have a net value of about $5.0 billion according to GAO's model, a reduction of about 34 percent. This large reduction relative to the drop in uranium prices is because approximately 153,000 metric tons of tails (out of the approximately 728,000 metric tons of tails that DOE currently manages) that were economical to re-enrich when natural uranium prices were $200 per kilogram and enrichment costs were $145 per separative work unit are no longer economical to re-enrich with uranium prices at $168 per kilogram and enrichment costs at $149 per separative work unit. Further decreases in uranium prices will continue to negatively affect the value of DOE's tails.

When uranium prices were at record highs, the lack of a sales strategy, in addition to the lack of legal authority, meant DOE took no action to obtain the tails' value. We believe it would unfortunate if DOE continues to be unable to respond to market conditions and monetize the value of its depleted uranium (if that is determined to be appropriate national policy) because it has not completed its strategy.

5. In simple terms, can you explain the difference between "transactional tails assay" and "operational tails assay"? What are the implications for a contract issued by DOE regarding these definitional differences?

The amount of enrichment (measured in separative work units) required to produce a given quantity of enriched uranium product is calculated based upon the tails assay—the concentration of uranium-235 present in the waste stream exiting the enrichment cascade. The lower the tails assay, the greater the number of separative work units required. Because enrichment services and uranium are, to some degree, substitutable for one another, the decision on the appropriate mix of uranium and enrichment services depends upon the market conditions (*e.g.*, the prices of uranium and enrichment services) at the time of the transaction.

Thus, when contracting with an enrichment company, a utility purchasing enrichment services for its uranium will specify a tails assay on which to base the calculation of separative work units the utility is purchasing. The tails assay specified in the contract between the utility and the enrichment company is known as the "transactional tails assay." It defines how much uranium feed the utility will deliver to the enrichment company and how many separative work units the utility will purchase from the enrichment company to produce a given quantity of enriched uranium product.

Because uranium prices and the costs of enrichment services fluctuate, however, market conditions may change between the time the contract between the utility and the enrichment company is signed and the time the utility's uranium is fed into the enrichment cascade. It is accepted industry practice for the enrichment company to optimize its operations and respond to changing market conditions by using more or less uranium or greater or fewer separative work units than specified in its contract with the utility. This is reflected by the term "operational tails assay," which refers to the tails assay the enrichment company uses to optimize its own operations based upon uranium prices and the costs of enrichment at the time the uranium is actually enriched. For example, if the price of uranium goes up after the contract with the utility is signed but before uranium is fed into the enrichment cascade, the enrichment company may choose to use a lower tails assay (*i.e.*, using less uranium feed and more separative work units) than specified in the contract. This is called "underfeeding."[1] In this case, because the utility has already delivered a specified quantity of uranium feed to the enrichment company, underfeeding will leave the enrichment company with extra uranium that the enrichment company can then sell on the market to obtain additional revenue.

The following example illustrates underfeeding. A commercial electric utility contracts with an enrichment company to produce 1,000 metric tons of enriched uranium product (with an assay of 4.5 percent uranium-235) for use in its nuclear reactor. The contract specifies a transactional tails assay of 0.30 percent uranium-235. Using this tails assay, almost 625,000 separative work units and over 10,200 metric tons of natural uranium feed would be required to produce the 1,000 metric tons of enriched uranium product. The utility delivers the 10,200 metric tons of natural uranium to the enrichment company and completes the purchase of the 625,000 separative work units in order to receive the 1,000 metric tons of enriched uranium product from the enrichment company. After the contract is signed, however, uranium prices go up before the utility's uranium is enriched. The enrichment company therefore chooses to use a lower operational tails assay of 0.25 percent to optimize its operations. In other words, the enrichment company chooses to underfeed. The utility receives the 1,000 metric tons of enriched uranium product that it contracted for, but, in the process, only 9,200 metric tons of natural uranium has been used out of the 10,200 metric tons the utility delivered to the enrichment company. Although the enrichment company has had to expend nearly 690,000 separative work units rather than the 625,000 the utility paid for, the enrichment company can offset that extra cost and/or receive more revenue by selling the 1,000

[1] Conversely, if uranium prices were to fall, the enrichment company could choose to use more uranium from inventories it already holds and fewer separative work units to produce a given quantity of enriched uranium product. This is called "overfeeding."

metric tons of natural uranium remaining from the natural uranium the utility delivered.

The implications of the difference between transactional and operational tails assay for DOE if it contracted to re-enrich its tails would be similar to the example above. If DOE contracts with an enrichment company at a transactional tails assay higher than the operational tails assay level given uranium prices and the costs of separative work units—and if the enrichment company were to retain the residual tails left over after re-enrichment—DOE may not receive the full value of the tails it chooses to re-enrich.

6. **In reviewing USEC's business model, did GAO find that the Treasury could lose significant value if USEC had a "transactional" tails assay of 0.30 percent, but USEC was able to strip the tails down to 0.21 percent and keep the difference between the two values? Over a 4-year period, how much could the Government lose in net realizable value if the "transactional" assay were 0.30 percent and the "operational" assay were 0.21 percent?**

Our response to this question is being provided under separate cover because it contains business proprietary information provided to GAO by USEC, disclosure of which may be prohibited by 18 U.S.C. § 1905.

7. **Should the "transactional" and "operational" assay be the same in any contract for enrichment services? Is there a risk of an indirect subsidy if these two assays are not the same?**

As discussed in response to Question 5 above, a transactional tails assay higher than the operational tails assay (the assay used by the enrichment company to optimize its own operations based upon uranium prices and costs of enrichment at the time the uranium is actually enriched) will generate value for the enrichment company beyond that envisioned in the original contract if uranium prices rise after the contract is executed. While the enrichment company's customer would still receive the product it contracted for, the enrichment company will obtain additional value from underfeeding.

It is important to note, however, that underfeeding only provides additional value to the enrichment company if uranium prices are higher at the time of enrichment than at the time of contracting. If uranium prices fall, underfeeding would financially harm—not benefit—an enrichment company. In such a case, the enrichment company would likely overfeed—that is, use an operational tails assay higher than the transactional tails assay—to protect itself from loss. Any additional value in these circumstances would appear to result from market conditions, not a government subsidy. In a situation such as this, DOE may wish to consider addressing market conditions in the terms of its contracts with the enrichment company.

8. **What is GAO's outlook for the price of uranium over the next 10 years? Is there a risk that if DOE stalls on selling its high-assay tails, the price of uranium could decline and taxpayers could receive a smaller return?**

Alternatively, is the outlook stable with limited opportunity cost from delay?

As noted in our testimony, there is no consensus among industry players regarding whether uranium prices will rise or fall in the future, or regarding the magnitude of any future price changes. On the one hand, uranium prices may experience some upward pressure because demand for uranium is expected to continue to rise, perhaps dramatically if new commercial nuclear power reactors come online in the next decade. However, the uranium supply situation is not as clear. Increased production in Australia and Canada may increase supply levels, as may new uranium mines in the Southwest United States. As noted in our March 31, 2008 report, *Nuclear Material: DOE Has Several Options for Dealing with Depleted Uranium Tails, Each of Which Could Benefit the Government*, GAO-08-606R, DOE also has significant inventories of uranium that could be used as an additional source of supply. All of these additional sources of supply may create downward price pressure.

As discussed in response to Question 4 above, uranium prices continue to fluctuate, making it all the more important for DOE to act quickly. For example, since our April 3 testimony, uranium prices have fallen over 10 percent, resulting in about a 34 percent reduction in the value of DOE's tails.

9. DOE's March 12, 2008, Policy Statement states DOE has broad authority to sell, transfer, or barter depleted uranium under the Atomic Energy Act. Does DOE have such broad authority? If not, please explain why GAO disagrees with DOE's legal views.

According to DOE's 2008 Policy Statement (page 1), "[t]he Department has broad authority under the Atomic Energy Act of 1954 (AEA) to loan, sell, transfer or otherwise utilize its inventories of depleted, natural and enriched uranium. In exercising this authority, the Department must act consistently with other relevant statutory provisions, such as section 3112 of the USEC Privatization Act which imposes limitations on certain specified transactions."

As noted in our testimony, we agree that the department has general authority under section 161m of the AEA, 42 U.S.C. § 2201(m), to "sell, lease, or otherwise make available . . . source . . . material" to appropriately licensed entities under certain conditions, and that source material generally would include depleted uranium (as well as natural uranium). We also agree that any DOE sales or transfers of depleted and other categories of uranium must comply with applicable provisions of the USEC Privatization Act, including section 3112, 42 U.S.C. § 2297h-10. Finally, we agree that to the extent "bartering" is authorized under AEA section 161m (the statute does not use this term; a barter might qualify as a sale, for example, if DOE exchanged uranium for goods or services of equal value), the statute otherwise—but for the USEC Privatization Act—would authorize bartering of depleted uranium.

However, we disagree with the DOE Policy Statement's assertion that DOE is currently authorized to sell or transfer depleted uranium under the AEA and the implication that the limitations of section 3112 do not restrict such sales or transfers. To the contrary, we believe section 3112 currently prohibits such transactions.

Section 3112(a) states that DOE "shall not" sell or transfer "any uranium" to "any person" except as "consistent with" the terms of that section. Because section 3112 contains no conditions under which DOE may sell or transfer depleted uranium, we believe DOE likely lacks authority to sell or transfer depleted uranium. DOE officials have suggested that its sale or transfer of depleted uranium would, in fact, be "consistent with" section 3112, because section 3112 does not contain any provisions explicitly addressing depleted uranium. As detailed in our testimony, however, this interpretation reads a "depleted uranium" exception into section 3112's unqualified prohibition against sale or transfer of "any uranium" and rewrites section 3112 to say that only sale or transfer of uranium categories explicitly identified in section 3112 are restricted. It also conflicts with the plain language of section 3112, violates statutory construction principles, and is unsupported by the statute's purpose and legislative history.

10. Please explain why DOE lacks legal authority to sell <u>depleted uranium tails</u>, but has the authority to sell <u>natural uranium</u>.

As noted in response to Question 9 above, DOE has general authority under section 161m of the AEA to sell source material to appropriately licensed entities under certain conditions, and source material would include natural uranium. Unlike with the sale of depleted uranium, however—which as explained in response to Question 9, we believe is prohibited by section 3112 of the USEC Privatization Act—the sale of natural uranium is authorized by section 3112, provided the sale complies with the conditions specified in section 3112(d).

11. DOE sold 8,500 metric tons of high-assay depleted uranium to the Bonneville Power Administration (BPA). The tails were transferred to Energy Northwest (EN), who contracted to have these tails re-enriched by USEC, and BPA will use this uranium to fuel the Columbia Generating Station in Washington State. DOE contends they have authority to sell the depleted uranium under Section 161m of the Atomic Energy Act (AEA).

a. Explain why Section 161m of the AEA does not give DOE the legal authority it needs to sell depleted uranium.

Please see response to Question 9 above.

b. Given GAO's legal view that DOE cannot sell depleted uranium without a change in law, was sale of these depleted uranium tails unlawful?

Our testimony and report did not specifically address the foregoing series of activities, known as the Uranium Tails Pilot Project (Pilot Project). Based on documentation provided by DOE, the majority provided following our April 3 hearing, it appears the Pilot Project included the transfer and/or sale by DOE of depleted uranium, which we believe would have been in violation of section 3112 of the USEC Privatization Act.

According to DOE's documentation, the primary participants in the Pilot Project were DOE's Office of Environmental Management (DOE-EM), BPA (an agency of DOE, *see*

16 U.S.C. § 832a), Energy Northwest (formerly the Washington Public Power Supply System), and USEC. The stated purpose of the Pilot Project was to "determine the usability of a portion of DOE's depleted uranium hexafluoride (DUF6) inventory . . for practical use in [an Energy Northwest] nuclear power production reactor, after enrichment [by USEC]."[2] To achieve this purpose, DOE-EM, "on behalf of BPA," agreed to deliver 672 cylinders of DOE's depleted uranium to USEC's Paducah, Kentucky enrichment facility for the account of Energy Northwest. In return, Energy Northwest agreed to pay DOE-EM $10,450 for each cylinder of depleted uranium successfully re-enriched by USEC and $2,200 per cylinder for DOE-EM's transportation and handling costs,[3] as well as to pay USEC approximately $88 million to re-enrich the depleted uranium.[4] The agreements made clear that upon delivery of DOE-EM's depleted uranium to USEC, all title, risk of loss, and responsibility for the depleted uranium passed to Energy Northwest.[5] This complete transfer of ownership and liability was underscored by successive Cylinder Transfer Acknowledgment letters from Energy Northwest to DOE-EM and BPA, which were designed to make clear that upon delivery and acceptance of the depleted uranium by USEC, "DOE has no further financial, administrative, custodial, or legal obligations of any type with regard to the cylinders."[6]

Pursuant to these agreements, between June 2005 and November 2006, 672 cylinders of DOE-EM's depleted uranium—approximately 8,534 metric tons—were delivered to and successfully re-enriched by USEC, and Energy Northwest paid DOE-EM a total of $8,500,800—$7,022,400 for DOE's depleted uranium and $1,478,400 to reimburse DOE's transportation and handling costs. According to DOE's documentation, these transactions constituted the "transfer" and "sale" of depleted uranium by DOE—the department transferred all title and interest in and responsibility for its depleted uranium to Energy Northwest, and in exchange, Energy Northwest paid DOE approximately $7 million, excluding costs.[7] As discussed in response to Question 9

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[2] May 26, 2005 Letter of Agreement No. 05GS-75180 between BPA and DOE-EM (Letter Agreement), p. 1. See also May 26, 2005 Transfer Agreement, Contract No. 05PB-11620, between BPA and Energy Northwest (Transfer Agreement), p. 1. According to DOE's documentation, Energy Northwest sells all electric generating capacity from its Columbia Generating Station nuclear power plant in Washington state to BPA, which then markets that power to utilities and industrial customers in the Pacific Northwest.

[3] Letter Agreement, p. 1.

[4] May 10, 2005 Memorandum for the DOE Deputy Secretary from the DOE Principal Deputy Assistant Secretary for Environmental Management and the Administrator and Chief Executive Officer of the Bonneville Power Administration re: "ACTION: Approve Uranium Tails Pilot Project involving Bonneville Power Administration, the Department of Energy Office of Environmental Management and Energy Northwest" (May 2005 DOE Action Memorandum), p. 4.

[5] Transfer Agreement, p. 2.

[6] May 26, 2005 letter from BPA to Energy Northwest enclosing sample Cylinder Transfer Acknowledgment letter, p. 1

[7] There is some conflict in DOE's documentation as to whether DOE-EM transferred and/or sold its depleted uranium to BPA, which in turn transferred and/or sold it to Energy Northwest, or whether DOE-EM transferred and sold its depleted uranium directly to Energy Northwest. In either event, DOE—either DOE-EM or BPA—transferred and sold depleted uranium to Energy Northwest. *See, e.g.*, "Frequently Asked Questions For The Uranium Tails Pilot Project," FAQ # 15 ("sales proceeds"), # 23 ("The Secretary has the statutory authority to approve this transfer and sale under its general authority under section 161m of the Atomic Energy Act.").

above, in our view, both the transfer and sale of depleted uranium is—and was at the time of the Pilot Project—prohibited by section 3112 of the USEC Privatization Act.

c. In addition to the question about whether DOE had authority to sell depleted uranium, did DOE comply with Federal procurement laws and regulations in this transaction with BPA, EN, and USEC?

Based on discussions with committee staff, we have clarified the committee's interest to be whether the BPA transaction complied with requirements governing disposition of federal property. Our work did not address this issue, but we would be happy to meet with committee staff to discuss this matter further. For the committee's information, according to documentation provided by DOE, the department appears to have relied on the federal surplus personal property regulations as authority to retain $1,478,400 in cost reimbursement payments from Energy Northwest.[8] Again, our work did not address whether this regulation authorized DOE to retain the reimbursement under these circumstances.

12. The U.S. Treasury sold 8,500 metric tons of high-assay tails to BPA for approximately $7 million (excluding benefits from avoided environmental management costs), and BPA received approximately $220 million in the form of lower fuel costs, according to a "Project Completion Report" prepared by the Bonneville Power Administration entitled "DUF6 Pilot Project: An Interdepartmental Transfer of Depleted Uranium."

a. Based on your review of the economics of this transaction as outlined in the Project Completion Report, did the U.S. Treasury receive "reasonable compensation"?

As noted in response to Question 11 above, our testimony and report did not specifically address the Uranium Tails Pilot Project. Based on documentation provided by DOE, and for the reasons stated in response to Questions 9 and 11.b. above, we believe the transfer and/or sale of depleted uranium by DOE, which otherwise would be authorized by section 161m of the AEA under certain conditions, is prohibited—and was prohibited at the time of the Pilot Project—by section 3112 of the USEC Privatization Act. Section 161m's price requirement—that DOE charge a price which, "in the opinion of [the department], will provide reasonable compensation to the Government"—therefore did not apply.

For the committee's general information, AEA section 161m's requirement of "reasonable compensation to the Government" (rather than reasonable compensation

[8] *See* "Frequently Asked Questions For The Uranium Tails Pilot Project," FAQ # 15; "DUF6 Pilot Project, An Intradepartmental Transfer of Depleted Uranium, Project Completion Report," p. 9; April 1, 2005 Environmental Clearance Memorandum, p. 1 ("the proposed action fits within the following class of action . . . [excluded from environmental review requirements]: 'Transfer, lease, disposition, or acquisition of interests in personal property . . . .'"); May 2005 DOE Action Memorandum, p. 4 ("Due to the Miscellaneous Receipts Act, DOE is precluded from retaining such fees [received for its depleted uranium], although it may retain fees in an amount equal to the direct costs and reasonably related indirect costs incurred by DOE to transfer the cylinders to [Energy Northwest].").

to the U.S. Treasury, which could imply that the compensation must be monetary) may afford DOE considerable, although not unlimited, discretion in determining compensation. The term "reasonable compensation" is not defined by the statute or discussed in the legislative history. Further, in the single reported court case mentioning section 161m, the court observed that "the specific language of this section affords [DOE] substantial discretion in setting prices to be paid by licensees: 'Prices shall be established on such nondiscriminatory basis as, *in the opinion of [DOE]*, will provide reasonable compensation to the Government. . . ..'" *Nuclear Transport and Storage, Inc. v. United States*, 703 F. Supp. 660, 670 (E.D. Tenn. 1988)(emphasis in original), *aff'd*, 890 F.2d 1348 (6th Cir. 1989), *cert. denied*, 494 U.S. 1079 (1990). (Because this case was litigated before enactment of the USEC Privatization Act in 1996, the restrictions and conditions of section 3112 of the Act did not apply.)

In addition, DOE received three benefits from the Pilot Project. First, by transferring 8,534 metric tons of its depleted uranium to Energy Northwest, DOE no longer needed to convert this hazardous material into a safer form for long-term storage and/or permanent disposal. DOE estimated those conversion costs at $4 per kilogram, for a total estimated cost avoidance of about $33.9 million. Second, as noted in response to Question 11.b. above, DOE received a cash payment of $7,022,400 for its depleted uranium exclusive of costs.

Third, as detailed in response to Question 12.b. below, when the Pilot Project was fully implemented in November 2006, Energy Northwest ultimately saved at least $214 million in fuel costs for its Columbia Generating Station, and even in May 2005 when the Pilot Project agreements were signed, Energy Northwest likely could have anticipated it would save approximately $68.5 million dollars in fuel costs (the difference resulting from lower natural uranium prices in May 2005). Energy Northwest passed on its cost savings to its sole customer BPA, whose rates, by law, must "hav[e] regard to the recovery . . . of the cost of producing and transmitting such electric power" and be set "with a view to . . . the lowest possible rates to consumers." 16 U.S.C. § 838g. Because BPA is required to recover its costs while charging the lowest possible rates, and because the Pilot Project resulted in lower costs and lower rates, the Pilot Project might be viewed as supporting BPA in fulfilling its statutory obligation to provide electric power "at the lowest possible rates."

b. Given the cost of enrichment services, did Energy Northwest or BPA acquire these tails at below fair market value?

USEC Privatization Act section 3112(d)(2)(C)'s price requirement—that DOE receive "not . . . less than . . . fair market value" when selling uranium from its inventory—pertains only to DOE sales of natural and low-enriched uranium. In addition, for the reasons stated in response to Questions 9 and 11.b. above, we believe section 3112 prohibits—and prohibited at the time of the Pilot Project—the transfer and sale of depleted uranium by DOE. Therefore, section 3112's "fair market value" price requirement did not apply to the Pilot Project.

For the committee's general information, the term "fair market value," which is not defined by the USEC Privatization Act or addressed by the legislative history, often

means the price that a willing buyer would pay to a willing seller under usual market conditions, with neither being under any compulsion to buy or sell and both having a reasonable knowledge of all relevant facts. *See, e.g., BFP v. Resolution Trust Corp.*, 511 U.S. 531, 537 (1994) (determination of fair market value in bankruptcy cases); 26 C.F.R. § 1.170A-1(c)(2) (Internal Revenue Service definition of fair market value for charitable donations). At the time the Pilot Project agreements were signed in May 2005, however, "usual market conditions" for depleted uranium had not been established—there was no open market in which depleted uranium was traded between willing buyers and sellers. Against this uncertainty, DOE agreed to sell 8,534 metric tons of depleted uranium to Energy Northwest, as noted in response to Question 11.b. above, which contained about 5,700 metric tons of uranium metal. When re-enriched by USEC, this produced 1,939 metric tons of natural uranium. Energy Northwest agreed to pay DOE $8,500,800 to obtain this uranium—$7,022,400 for DOE's uranium and $1,478,400 for DOE's handling costs—and to pay approximately $88 million to USEC to re-enrich it.[9] Thus, in total, Energy Northwest appears to have paid about $96.5 million to obtain the natural uranium under the Pilot Project.

By comparison, it appears Energy Northwest could have acquired 1,939 metric tons of natural uranium on the competitive spot market in May 2005 for approximately $88 per kilogram, or $165 million in total. Thus at the time the Pilot Project agreements were signed, Energy Northwest could have anticipated a net value in cost savings for DOE's depleted uranium of approximately $68.5 million ($165 million in uranium value minus $96.5 million in anticipated costs), versus the $8.5 million that it paid DOE.[10]

c. What was the avoided environmental management cost?

As detailed in response to Question 12.a. above, DOE's avoided cost was approximately $33.9 million.

d. Did EN or BPA receive an indirect subsidy by virtue of securing these tails at the price they paid? If so, was this a lawful subsidy or did this subsidy require appropriations authority?

Our work did not address whether Energy Northwest or BPA received an indirect subsidy by virtue of securing the tails at the price they paid.

e. Energy Northwest's costs for re-enriching these high-assay tails was approximately $169 per Separative Work Unit (SWU),

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[9] According to DOE's documentation, the final re-enrichment costs and fees paid to USEC for its work under the Pilot Project was $86.1 million. See "DUF6 Pilot Project, An Intradepartmental Transfer of Depleted Uranium, Project Completion Report," p. 9. When the Pilot Project agreements were being finalized, the projected costs and fees to be paid to USEC were approximately $88 million. See May 2005 DOE Action Memorandum, p. 4.

[10] Because of the absence of an established market for depleted uranium, estimation of its market value requires the use of modeling. For example, to estimate the current potential value of DOE's depleted uranium, GAO developed a model using standard formulas for the amounts of enriched uranium and depleted uranium produced from given quantities of uranium and enrichment services. The model used data from DOE on the quantities and uranium-235 concentrations of depleted uranium in the department's inventory and used uranium price and enrichment cost data obtained from nuclear industry trade publications.

according to the Project Completion Report. Did USEC receive any additional benefits in the form of tails from which it could economically underfeed and derive additional value?

Our response to this question is being provided under separate cover because it includes Energy Northwest and USEC business proprietary information provided by DOE.

13. Would it be lawful for DOE to barter natural uranium to pay for re-enrichment services? If so, could DOE do this without appropriations?

Our work did not specifically address whether "bartering" is authorized by the AEA or the USEC Privatization Act. As detailed below, if and to the extent it is authorized, we believe DOE would be authorized to barter natural uranium to pay for re-enrichment services and to do so without additional appropriations.

Various provisions of the Atomic Energy Act authorize DOE to sell, lease, distribute, or otherwise make source material (which would include natural uranium) available to certain appropriately licensed entities under certain conditions. As noted in response to Questions 9 and 10 above, under AEA section 161m, DOE may "sell, lease, or otherwise make available" natural uranium to appropriately licensed entities under certain conditions. AEA section 63, 42 U.S.C. § 2093, also authorizes DOE to "distribute" natural uranium within the United States, under certain conditions. As noted above, the AEA does not use the term "barter"; if and to extent it is authorized under the AEA (a barter might qualify as a sale, for example, if DOE exchanged uranium for goods or services of equal value) and depending on the terms of the particular transaction, bartering natural uranium would generally be authorized the statute.

However, any DOE barter authority under the AEA would be circumscribed by the USEC Privatization Act. Like the AEA, the Privatization Act also does not explicitly mention "barter"; if and to the extent it is authorized by the Privatization Act (for example, as a sale), DOE would be authorized to barter natural uranium if it complied with the three conditions specified in section 3112(d): the President must determine the material is not needed for national security, the Secretary of Energy must determine sale will not have a material adverse impact on the domestic uranium industry, and the Secretary must receive a price that "will not be less than the fair market value of the material." If all of these statutory and other conditions were met, the transaction would be authorized, and it would not require additional appropriations.

14. Alternatively, would it be lawful for DOE to barter depleted uranium to pay for re-enrichment services? If so, could DOE do this without appropriations authority?

We do not believe DOE would be authorized to barter depleted uranium to pay for re-enrichment services. As discussed in response to Question 10 above, we believe section 3112 of the USEC Privatization Act prohibits the sale and transfer of depleted uranium. Thus even assuming that a particular barter transaction qualified as a sale

or transfer, the transaction would be prohibited by section 3112.

15. Under H.R. 4189, would DOE need to obtain appropriations authority to re-enrich tails, even if DOE sold the uranium in the same year? If DOE did not secure appropriations for this purpose, would such actions violate the Anti-Deficiency Act?

Section 1 of H.R. 4189 would require DOE to enter into a contract with the operator of the Paducah, Kentucky Gaseous Diffusion Facility (currently USEC) for re-enrichment of DOE's depleted uranium tails currently stored at Piketon, Ohio. Section 2 of the bill would require DOE to sell the re-enriched uranium and deposit the net sales proceeds into the Uranium Enrichment Decontamination and Decommissioning Fund, where it would be available for appropriation to be used for environmental remediation at the Paducah and Portsmouth, Ohio, uranium enrichment facilities.

If DOE entered into the above contract, and thus obligated funds, for re-enrichment of its depleted uranium tails, it generally would need to have an appropriation available for this purpose, or have some other form of budget authority, at the time of the obligation, that is, when the contract is signed. *See, e.g.*, 72 Comp. Gen. 59 (1992). Entering into an obligation in advance of or in excess of available budget authority would be a violation of the Antideficiency Act unless authorized by law. 31 U.S.C. §1341(a)(1). GAO has held that where agencies are authorized by statute to incur obligations in excess of appropriations available to pay the obligations—that is, where the agency has "contract authority"—the overobligation is not a violation of the Antideficiency Act. 71 Comp. Gen. 502 (1992); 65 Comp. Gen. 4 (1985). We have not examined whether H.R. 4189 would constitute contract authority allowing DOE to incur an obligation in excess of or in advance of appropriations. Under section 2 of the bill, however, proceeds from the sales would not be available for, and could not be used to fund, re-enrichment services.

16. GAO's legal memorandum indicates that the U.S. Federal Government must receive "reasonable compensation" from depleted uranium sales if DOE relies on its authority under the Atomic Energy Act. If DOE, however, sold this material under section 3112 of the USEC Privatization Act, sales must be "not be . . . less than fair market value."

a. Are these two terms interchangeable? Does the term "reasonable compensation" allow DOE to accept "less than fair market value"?

As a point of clarification, GAO's legal analysis stated that the federal government would have to receive "reasonable compensation" if it were authorized to sell uranium from its inventory under AEA section 161m, but also that section 3112 of the USEC Privatization Act circumscribes this authority and authorizes DOE only to sell low or low-enriched uranium from its inventory and only if it receives "not . . . less than . . . fair market value. " Our analysis also stated that DOE is currently prohibited from selling depleted uranium altogether under either statute.

Our work did not specifically determine whether these undefined "reasonable

compensation" and "fair market value" standards are interchangeable. For the committee's general information, section 161m appears to give DOE greater discretion than section 3112 in setting a sales price. As discussed in response to Question 12.a. above, section 161m states that compensation must be reasonable "in the opinion of [DOE]," and the only court to have commented on this provision characterized it as affording DOE "substantial discretion in setting prices to be paid by licensees . . .." Section 3112, by contrast, does not refer to DOE's "opinion" but instead speaks solely to "fair market value," a term which, as discussed in response to Question 12.b. above, is commonly determined by reference to factual market data.

Furthermore, it appears that a "reasonable compensation" standard may potentially require lower monetary compensation than a "fair market value" standard. In at least one instance—the Federal Land Policy and Management Act—Congress has provided for payment of "reasonable compensation" (by the government) but stated that this payment is "not to exceed the fair market value" of the interest being compensated. *See* 43. U.S.C. § 1752(g).

Moreover, based on its 2008 Policy Statement, DOE itself appears to believe that "reasonable compensation"—or at least "reasonable value"—may be less than "fair market value." First, as we noted at the April 3 hearing, the 2008 Policy Statement (at page 2) asserts that "[a]ll transactions involving excess uranium transfers or sales to non-U.S. Government entities must result in the Department's receipt of reasonable value for any uranium sold or transferred to such entities. Reasonable value takes into account market value, as well as other factors such as the relationship of a particular transaction to overall Departmental objectives and the extent to which costs to the Department have been or will be incurred or avoided." Second, as we noted, DOE's 2008 Policy Statement goes on to assert (at page 4), regarding its disposition of depleted uranium in particular, that after it conducts "appropriate" cost-benefit analysis to determine what circumstances would justify enriching and/or selling potentially valuable depleted uranium, DOE "will seek to obtain the best economic value for the Department, in light of the Department's identified objectives and needs . . . ." The department does not define what would constitute "best economic value" or explain its relationship to "reasonable compensation," "reasonable value," or "fair market value."

b. Is this definitional difference one which Congress should clarify were it to enact legislation dealing with depleted uranium sales or barter?

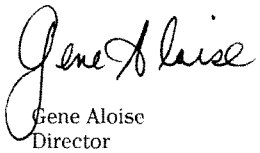
As stated in our testimony, we recommend that Congress consider enacting legislation to clarify the conditions under which DOE may dispose of its inventory of depleted uranium. If such conditions included a standard for minimum compensation, greater clarity would be helpful. Depending on the terms of such legislation, this might reap significant benefits for the government because of the potentially significant revenue that might be obtained.

***

If you or other members of the committee have questions regarding these matters, please contact Gene Aloise, Director, at (202) 512-3841 or aloisee@gao.gov, or Susan Sawtelle, Managing Associate General Counsel, at (202) 512-6417 or

sawtelles@gao.gov. GAO staff members who made major contributions to this correspondence are Ryan T. Coles, Assistant Director; Thomas Armstrong, Karen Keegan, and Kenneth Patton, Assistant General Counsels; and Richard Burkard, Terry Hanford, and Omari Norman.

Sincerely yours,



Gene Aloise
Director

Susan D. Sawtelle
Managing Associate General Counsel

Department of Energy
Washington, DC 20585

July 9, 2008

The Honorable Bart Stupak
Chairman
Subcommittee on Oversight and Investigations
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

On June 5, 2008, we sent you the edited Transcript of the April 3, 2008, testimony given by Dennis Spurgeon, Assistant Secretary, Office of Nuclear Energy, regarding "Selling the Department of Energy's Depleted Uranium Stockpile: Opportunities and Challenges."

Enclosed are three Inserts requested by you and Chairman Dingell for the hearing record. Responses to the remaining Inserts are being prepared and will be forwarded to you as soon as possible.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Lillian Owen, at (202) 586-2031.

Sincerely,

Lisa E. Epifani
Assistant Secretary
Congressional and Intergovernmental Affairs

Enclosures

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COMMITTEE:	HOUSE ENERGY & COMMERCE SUBCOMMITTEE ON OVERSIGHT & INVESTIGATIONS
HEARING DATE:	APRIL 3, 2008
WITNESS:	DENNIS SPURGEON PAGE: 42, LINE: 839-850

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DOE does not concur with GAO's opinion. DOE is vested with the authority and responsibility to interpret and implement the Atomic Energy Act (AEA) and other statutes and regulations applicable to the sale and transfer of uranium, and has made the determination that the AEA grants the Department broad authority to sell or transfer depleted uranium. Section 3112 of the USEC Privatization Act provides an overlay to the exercise of that authority by the Department in certain specified situations; it neither grants any new authority nor rescinds any existing authority. Section 3112 does not address the exercise of the Department's existing authority with respect to depleted uranium.

801 Mr. {Stupak.} As GOA--GAO--I am having a rough time
802 today. It sounds like you don't have a specific policy on
803 how to handle this.
804 Mr. {Spurgeon.} We issue a request for expressions of
805 interest when we need that to be able to inform a particular
806 procurement action. The one that probably is, I would say,
807 in the lead right now is some of our off-spec material
808 because of the urgency associated with the containers that
809 that off-spec material happens to be held in. So we are
810 proceeding forward on dual tracks here, not just a single
811 track relative to--
812 Mr. {Stupak.} All right. Well, let me help you out a
813 little bit here. Nuclear energy, which is going to testify
814 later, in their testimony indicates that the utilities which
815 own 53 actors or more than half of the 103 actors in U.S.
816 have indicated an interest--
817 Mr. {Spurgeon.} Yes, sir.
818 Mr. {Stupak.} --in your high-assay tails. Isn't this
819 sufficient information for DOE to make a decision to direct
820 test market interest?
821 Mr. {Spurgeon.} We are aware of that interest. We are
822 aware of the interest in a number of people. So we are very
823 confident that we will have sufficient interest in the tails
824 in order to have a process that will allow us to get fair

825 value to the government.

826 Mr. {Stupak.} All right. Well, the GAO says that the

827 DOE's legal interest or legal--let me quote now--``authority

828 to sell or transfer tails in their current form is doubtful''

829 because no part of USEC Privatization Act ``specifies

830 conditions under which depleted uranium may be sold.'' Do

831 you agree with GAO's legal opinion?

832 Mr. {Spurgeon.} Sir, as the secretary's statement said,

833 the department does have broad authority under the Atomic

834 Energy Act to sell, transfer, and otherwise utilize its

835 inventories of depleted natural and enriched uranium.

836 Mr. {Stupak.} Okay, but GAO says they doubt you have

837 the authority. So do you believe they do other than this

838 broad discretion?

839 Mr. {Spurgeon.} Sir, we are not aware of anything that

840 has happened that would repeal that broad authority that we

841 have. However, the department has not yet received and we do

842 not yet have an analysis of the GAO's opinion. That is

843 something--I would be glad to take that issue for the record

844 and have our--

845 Mr. {Stupak.} Well, when would you be in a position to

846 tell us and be able to advise the committee whether or not

847 you would need the legal authority or have the legal

848 authority?

COMMITTEE:	HOUSE ENERGY & COMMERCE SUBCOMMITTEE ON OVERSIGHT & INVESTIGATIONS
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On May 5, 2008, the Department of Energy (DOE) provided in response to Representatives John Dingell and Bart Stupak's April 24, 2008 letter, documents related to the nomination of Assistant Secretary Spurgeon, ethics reviews and assessments concerning his former employment relationships, and his financial disclosure statements.

In addition, on May 30, 2008, DOE counsel met with Subcommittee on Oversight and Investigations staff to review the materials submitted pursuant to the Chairmen's May 5, 2008 letter and to answer questions.

Accordingly, DOE believes that it has been responsive to Chairman Dingell's requests related to this issue.

1408 USEC.

1409 Mr. {Spurgeon.} If there was something that happened

1410 positive to USEC, obviously it would be a benefit to the

1411 employees of the company.

1412 The {Chairman.} Now, have you ever recused yourself

1413 from dealing with your former company and friends and

1414 colleagues at USEC?

1415 Mr. {Spurgeon.} No, sir.

1416 The {Chairman.} Have you got authorization or an

1417 opinion from the ethics officers at the Department of Energy

1418 which says that you should or should not recuse yourself?

1419 Mr. {Spurgeon.} Yes, sir. My former employment was--

1420 and any restrictions on what I could do was thoroughly vetted

1421 at the time prior to my nomination for the current position.

1422 The {Chairman.} Will you submit that to the committee

1423 please?

1424 Mr. {Spurgeon.} I think we did, did we not?

1425 The {Chairman.} I am assuming this is in writing. So I

1426 am assuming that you can submit this to the committee.

1427 Mr. {Spurgeon.} I believe we did already, but--because

1428 I think it was asked for.

1429 The {Chairman.} Well, appreciate if you did so. Does

1430 the Secretary of Energy know you have not recused yourself?

1431 Mr. {Spurgeon.} Yes, sir. The Secretary of Energy

1432 knows I have no recusals whatsoever.

1433 The {Chairman.} I think my time is about expired, Mr.

1434 Chairman. I will wait for a second time.

1435 Mr. {Stupak.} You still got two minutes, Mr. Dingell.

1436 We went 10 minutes on this, and the recusal statement would

1437 be Exhibit Number 12 in our book.

1438 The {Chairman.} Well, I will proceed at the pleasure of

1439 the chair.

1440 Mr. {Stupak.} Please continue.

1441 The {Chairman.} Has your--I will repeat this question.

1442 Have you got a legal opinion from the legal counsel at DOE on

1443 your recusal and whether you should be recused or not?

1444 Mr. {Spurgeon.} I don't happen to be a lawyer, but I do

1445 know that it was determined prior to my being nominated that

1446 I was not required to recuse myself from any activities with

1447 any company upon my confirmation as assistant secretary.

1448 The {Chairman.} Would you please submit that to the

1449 committee if you could?

1450 Mr. {Spurgeon.} Yes, sir, if it--

1451 The {Chairman.} All right.

1452 Mr. {Spurgeon.} --whatever exists.

1453 The {Chairman.} Now, this question for Mr. Fertel.

1454 Isn't it the case, Mr. Fertel, that there are utility

1455 companies where members of the Nuclear Energy Institute that

COMMITTEE: HOUSE ENERGY & COMMERCE SUBCOMMITTEE ON OVERSIGHT & INVESTIGATIONS

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As we understand the question, Mr. Stupak asks whether DOE is willing to commit at this time to provide a copy, to GAO or the committee, of any future sole source contract entered into between DOE and USEC for sale or re-enriching of depleted uranium. DOE has no current plans to enter into such a hypothetical sole source contract with USEC. Subject to any applicable privileges or restrictions, DOE will respond appropriately to any proper request from the GAO or the committee.

1600 a train wreck or to cause a train wreck?

1601 Mr. {Spurgeon.} Sir, I will do whatever--you know, I am

1602 not going to make a commitment that I can't follow.

1603 Mr. {Stupak.} Then how can we ensure transparency then?

1604 So the questions that I am sure are a little uncomfortable

1605 for you and a little uncomfortable for us to ask you, that we

1606 have that transparency so those questions are cleared up and

1607 there is no question about what is going on. Because if you

1608 look at tab 12, again the one in front of you, your recusal,

1609 it only says you are to recuse yourself from family

1610 interests. You are not recused from any other matter

1611 including your former employer. So I would think that boy,

1612 that is almost a conflict when you go from the CEO of USEC

1613 right into the decision making process on how whether we

1614 auction or do a sole source contract to USEC. You will make

1615 the decision, right, to make the recommendation to the

1616 secretary on which way we go? You will make that decision to

1617 make the recommendation after you gather all the information.

1618 Mr. {Spurgeon.} Well, I want to make clear the prime

1619 contracting responsibility for disposition of our tails is

1620 our environmental management organization.

1621 Mr. {Stupak.} Who is going to make the recommendation

1622 to you. They are under--

1623 Mr. {Spurgeon.} Well no, he is going to make the

1624 recommendation to the secretary as well. He does not report
1625 to me in any sense of the word.
1626 Mr. {Stupak.} Well, I thought you were head of all
1627 nuclear policies.
1628 Mr. {Spurgeon.} From a policy standpoint. To integrate
1629 our department-wide policy on disposition of all of our--
1630 Mr. {Stupak.} Sure.
1631 Mr. {Spurgeon.} --assets so that we are coordinated.
1632 Mr. {Stupak.} So you would be involved--
1633 Mr. {Spurgeon.} It is a coordinating function.
1634 Mr. {Stupak.} And you would be involved in that
1635 decision making? You would coordinate with this management
1636 group.
1637 Mr. {Spurgeon.} We try to coordinate our actions within
1638 the department. Yes, sir. But I do not control the
1639 contracts from the Environmental Management Organization in
1640 any way, shape, or form.
1641 Mr. {Stupak.} So then there shouldn't be an objection
1642 then, if there is a contract, to share it with GAO to make
1643 sure that we are getting the best bid for the taxpayer and
1644 that we are doing it in everyone's best interest, to share it
1645 with GAO and this committee then? There shouldn't be an
1646 objection then.
1647 Mr. {Spurgeon.} That is one that I will take back. I

Department of Energy
Washington, DC 20585

August 8, 2008

The Honorable Bart Stupak
Chairman
Subcommittee on Oversight and Investigations
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

On April 3, 2008, Dennis Spurgeon, Assistant Secretary, Office of Nuclear Energy, testified regarding "Selling the Department of Energy's Depleted Uranium Stockpile: Opportunities and Challenges."

Enclosed are the answers to 10 questions that were submitted by you and Representative Dingell for the hearing record. The remaining responses are being prepared and will be forwarded to you as soon as possible.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Lillian Owen, at (202) 586-2031.

Sincerely,

Lisa E. Epifani
Assistant Secretary
Congressional and Intergovernmental Affairs

Enclosures

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QUESTION FROM REPRESENTATIVE DINGELL

Q1. Please describe the specific steps the Department of Energy (DOE) has taken since the Subcommittee hearing on April 3, 2008, to realize value from DOE's stockpile of depleted uranium tails.

A1. DOE has begun drafting documents and taking the necessary steps for the sale of some of the excess uranium material. This effort includes the process of conducting an environmental assessment covering this material and developing a Request for Proposal (RFP) and cost analysis in support of the competitive sale process.

QUESTION FROM REPRESENTATIVE DINGELL

Q2. On February 14, 2008, Representative Stupak and I urged DOE to issue a Request for Information (RFI) to test market interest from utilities, enrichers, and others in bidding on depleted uranium tails. Your March 12, 2008, reply did not respond to this suggestion. Please answer "yes" or "no if DOE is going to issue an RFI to gauge market interest regarding the depleted uranium tails. If yes, when?

A2. DOE has not yet made any final decisions, we anticipate informing the Committee after we have finalized the procurement documentation and determined an expected release date.

QUESTION FROM REPRESENTATIVE STUPAK

Q14a. In 2005, as part of a transaction between DOE and the Bonneville Power Administration (BPA), DOE transferred about 8,500 metric tons (MT) of high-assay tails to the Energy Northwest (EN). In turn, EN had the high-assay tails re-enriched by USEC. This uranium will be used to make fuel for the Columbia Generating Station that is run by Energy Northwest.

The U.S. Treasury received approximately $7 million (and avoided up to $40 million in environment management costs) for the high-assay tails, and BPA received approximately $220 million in the form of lower fuel costs, according a "Project Completion Report" prepared by the Bonneville Power Administration entitled "DUF6 Pilot Project: An Intradepartmental Transfer of Depleted Uranium." How did DOE arrive at a valuation of only $7 million in cash payment? How did DOE calculate the value of the U-235 in the high-assay tails?

A14a. The primary purpose of the Uranium Tails Pilot Project (Pilot) was to determine the usability of a portion of the Department of Energy's (DOE's) depleted uranium hexafluoride (DUF6) inventory in lieu of disposal and to determine if the concept of re-enriching could be practically implemented. The Pilot was negotiated so that financial benefits received by DOE- Environmental Management (EM)/U.S. Treasury (Treasury) and Energy Northwest (EN)/Bonneville Power Administration (BPA) would be roughly equal. The total compensation DOE-EM/Treasury would receive from the Pilot, both cash and avoided disposal costs, would be roughly equal to the future fuel savings EN/BPA would receive.

DOE-EM would be compensated $2,200 per cylinder for each time a cylinder was transported and would collect for the Treasury $10,450 for each cylinder that was successfully processed for a total cash payment of $8.5 million for the Pilot. DOE-EM would also avoid disposal costs of $30 million - $34 million ($3.5- $4.0

per Kg) for the 8.5 thousand metric tons of DUF6 the Pilot consumed. Thus the total estimated benefits to DOE-EM would be approximately $38 to $42 million. In fact, DOE incurred less cost in the transportation and actually returned $8,386,400 to the US Treasury. Further, the cost avoided is now estimated to be closer to $50 million based on the more recently estimated cost estimates for the DUF6 Conversion Project.

The market value of natural uranium at the time the pilot project was proposed in the fall of 2004 was $62 per Kg. The DUF6 to be processed as part of the Pilot was estimated by EN to have a market value of $112 to $123 million based on the estimated recoverable U-235 content. However, this estimated market value did not account for expenditures needed to process the DUF6 in order to recover the U-235 content of the material. EN originally estimated it would spend $87 million on the Pilot not including financing charges, consisting of $78.4 million for enrichment services and $8.5 million in compensation to DOE-EM for transportation and the DUF6. Thus, EN/BPA's estimate of net future fuel savings at that time was $25-$36 million.

At the time the parties entered into the Pilot, both DOE-EM and EN/BPA anticipated roughly commensurate financial benefits from the Pilot, with DOE-EM expecting benefits $30-34 million in avoided disposal costs, and BPA/EN expecting benefits of approximately $25-$36 million in avoided fuel costs. In

addition, about $8.5 million less handling costs would be provided to the US Treasury.

The respective benefits to DOE-EM and EN/BPA expected from the Pilot also were considered in association with Pilot risks. In contrast to purchasing on the open market, the DUF6 supplied by DOE-EM for the Pilot came without any warranties or representations as to: merchantability; fitness for a particular purpose; or that the cylinders or material delivered would not result in injury or damage when used. EN/BPA assumed the risk for arriving at an equitable arrangement for the re-enrichment with USEC and for financing the cost for re-enrichment.

At the time the Pilot was proposed in the fall of 2004, the estimated financial benefits to DOE-EM/Treasury for the estimated natural uranium to be produced from the DUF6 was considered adequate compensation for a demonstration program designed to determine if DUF6 scheduled for disposal could be economically processed into a commercial product. This consideration of adequate compensation was based on DOE-EM's savings in avoided disposal costs, lack of any warranty provided on the DUF6 to be supplied for the Pilot, and critical data DOE-EM would obtain on the material condition of the DUF6 inventory.

The allocation of expected benefits and costs to DOE-EM and BPA/EN arising from the Pilot were based on estimates made at the inception of the Pilot in 2004 that have since changed. The actual Pilot costs incurred by EN/BPA was $126 million (including $31 million for bond financing), which was higher than the initial estimate. DOE-EM's updated estimate for avoided disposal costs for the DUF6 under the Pilot has grown by approximately $15 million since the 2004 estimate. The rapid rise in uranium prices during the period of the Pilot increased cost savings to EN/BPA for avoided fuel costs beyond the original estimate. It would be inappropriate to consider this rise in uranium prices as the only factor in assessing whether the allocation of Pilot benefits/risks to DOE-EM and EN/BPA was fair and equitable. When the Pilot was negotiated, neither party (DOE-EM and BPA/EN) predicted such a rapid rise in uranium prices would occur during the short period of the Pilot. If the market value of uranium had reversed due to other market conditions, the Pilot would have resulted in somewhat higher nuclear fuel costs for EN/BPA as compared to what EN had been paying for nuclear fuel in inventory or for purchasing the uranium on the open market. The EN/BPA analysis compares projected savings 18 months after the November 2006 spot market price. DOE/EM believes a better comparison would be to compare the DOE-EM cost avoided to the price of uranium at the time of the negotiated agreement, which was equitable at the time.

QUESTION FROM REPRESENTATIVE STUPAK

Q14b. Does DOE agree with the economic analysis by BPA with respect to avoided environmental management costs? If not, what was the avoided cost? Please provide the basis for this calculation.

A14b. DOE agrees with the economic analysis provided by EN/BPA , but believes the estimated savings are greater to the DOE today due to the increased estimate for DUF6 Disposition by as much as $15 million.

The worth of avoided environmental management costs was estimated to be in the range of $3.5 - $4.0 per kg of high-assay depleted uranium tails (DUF6). The cost assumption is based upon: (1) transportation costs; (2) chemically deconverting the DUF6 to uranium oxide; and (3) burying the material in a proper land fill. The construction of the plant to deconvert the DUF6 to uranium oxide suitable for final disposal has not yet been completed so the actual full value of avoided costs has not yet been determined. More recent estimates from DOE/EM increase the range for conversion costs up to almost $5.9/kg.

QUESTION FROM REPRESENTATIVE STUPAK

Q14c. Does $7 million plus the value of avoided environmental management costs constitute "fair market value"? Did DOE approve this transaction based on the Government receiving "reasonable compensation"?

A14c. The primary purpose of the Uranium Tails Pilot Project (Pilot) was to determine if the high-assay depleted uranium tails (DUF6) had any market value based on actual data for handling costs, processing costs, material condition of the cylinders, and unknown factors such as potential contamination contained within the DUF6 inventory. The DUF6 was supplied without any warranties or representations as to: merchantability; fitness for a particular purpose; or that the cylinders or material delivered would not result in injury or damage when used. It would be unreasonable to assume the DUF6 would have the same value as uranium purchased on the commercial market when there was limited data available on the material condition of the DUF6 being supplied. This was the first time DOE had entered into such a Pilot and was very interested in determining the practicality of such an arrangement for potential future sales dealing with the rest of DOE's high assay tails. The primary purpose was not to see what the market value of the material was, but to establish if this concept would work for other DOE tails of similar assay and to understand what would be learned prior to any future transactions. Prior to completion of the Pilot, DOE determined that any subsequent sales would be competitively awarded.

Initially in the fall of 2004 when the final structure of the Pilot was proposed the worth of DUF6 was estimated at $112 -$123 million by EN using published trade journals' market value for natural uranium of $62/KG. As noted, the $62/KG

assumption for DUF6 is a high dollar estimate and a generous assumption since the DUF6 under the Pilot contained no associated warranties. EN estimated that $85 million - $88 million, not including finance charges, would be expended to re-enrich the DUF6 to the equivalent amount natural uranium giving the DUF6 a net value of $27-$35 million. DOE-EM (and ultimately the U.S. Treasury) would benefit from: (1) avoided disposal costs of $30 million to $34 million; (2) $1.5 million for transportation and handling costs; and (3) an additional $7 million for the uranium contained in the cylinders -- for a total compensation of $38 million to $42 million. Based on this rough analysis the $7 million that DOE-EM was to and did indeed receive to pass on to Treasury was determined to be reasonable compensation. The actual amount was over $8.3 million. In addition, DOE's estimate of the avoided cost for disposal has increased about $15 million. The EN/BPA analysis that compares the savings to the November 2006 spot market price for Uranium 18 months after the agreement was signed. DOE believes the appropriate comparison is to compare the cost saved to the price of uranium at the time of the negotiated agreement and that it was equitable at the time.

QUESTION FROM REPRESENTATIVE STUPAK

Q14d. While the ratepayers of the Pacific Northwest will theoretically receive benefits from lower nuclear fuel costs, do you consider $7 million equitable compensation to the U.S. Treasury (including avoided environmental management costs) for the value of this uranium when BPA (sic) received $220 million in value?

A14d. DOE believes the compensation to the Treasury, the costs avoided to EM and the benefits to the Government from the Pilot at the time negotiated reflected a fair and equitable agreement. DOE believes the appropriate comparison is to compare the cost to the price at the time of the negotiated agreement and that it was equitable at the time. Given the $7 million as part of the total estimated compensation of $38 - $42 million, and the nature of the Pilot as an experimental project, the estimated compensation was determined to be equitable at the time the deal was negotiated. As stated in Q13, DOE did not weigh the equity of the deal exclusively on the cost avoided. In addition to initial estimates of roughly equal financial benefits, DOE-EM would not need additional funding to implement the Pilot as EN would provide $2,200 per cylinder to cover transportation and handling expenses. The Pilot was structured so DOE/EM would avoid the risks associated with the Pilot. DOE-EM would bear no market risk since it would receive the same cash payment if the market prices fell. Similarly, DOE-EM would bear no technical risk associated with the ability to process the cylinders or potential contamination of the subject high-assay tails (DUF6) since the cylinders were provided without warranty. Lastly, DOE-EM would have no contractual obligations with USEC. Although the benefits to the DOE in addition to the identified cost avoided and return to the US Treasury have not been quantified, they should be considered in the overall return to the

Government as this Pilot may eventually lead the way for future competitive sales of DUF6 for the DOE. Any such sales will include the lessons learned from the EN/BPA Pilot.

DOE-EM, EN and BPA did not contemplate that during the Pilot's duration the uranium market would go through one of it most volatile periods in recent history, with wholly unexpected increases in the price of uranium by a factor of almost three times the existing price assumed at the inception of the Pilot. The result was of course a larger financial benefit than expected for EN/BPA and the ratepayers of the Northwest in that the Pilot held down medium-term nuclear fuel cost increases. Such larger power cost-saving benefits would accrue if higher uranium prices continued during the eight year period (2009 – 2016) during which the nuclear fuel from the Pilot is to be used by EN.

The future benefits to DOE-EM also increased with the success of the Pilot. The data obtained on material condition of the inventory will allow DOE-EM to provide the necessary information to the commercial market in order to help DOE and the U.S. Treasury receive higher compensation for the remaining inventory due to the reduced risks and uncertainties. Since EN/BPA had assumed the Pilot's risk elements it was not viewed as unreasonable that EN/BPA should obtain the benefits of possible market price increases. If the inverse had occurred and market prices had fallen, DOE-EM and Treasury would still have received the same EN/BPA/Ratepayer financial compensation as well as the critical data on

material condition of the DUF6 inventory. EN/BPA's net financial benefits would have not only decreased but quite possibly could have gone negative.

QUESTION FROM REPRESENTATIVE STUPAK

Q14e. Why was a price escalator, which would ensure that DOE shared in profits associated with an increase in uranium prices, omitted from the contract?

A14e. The proposed Uranium Tails Pilot Project (Pilot) was structured so DOE-EM would assume no additional risk in the Pilot: (1) no market risk as DOE-EM would receive the same cash whether the market price rose or fell; (2) no technical risk associated with the ability to process the cylinders or possible contamination of the subject high-assay tails (DUF6); and (3) no contractual obligations with USEC. Since EN/BPA had assumed the Pilot's risk elements, it was not viewed as unreasonable that EN/BPA, along with the Northwest rate payers, should obtain the benefits of possible market price increases. Additionally, DOE-EM did not consider an escalator necessary because it viewed the Pilot as a short-term, limited demonstration project, and at the time, the agreement was viewed as equitable in its totality. DOE anticipates that any future arrangements would include index pricing for any long term sale or extended transaction of high-assay DUF6 that occur over time. However, DOE believes that one time sales of commodities would likely not include index pricing, as the appropriate market price is the price at the time of sale, regardless of what happens after the sale.

QUESTION FROM REPRESENTATIVE STUPAK

Q14f. When the high-assay depleted uranium tails were used as a feed material and re-enriched by USEC, to what tails assay was this material stripped? Did USEC retain the tails assay below a certain level? If so, what was the arrangement?

A14f. The high-assay depleted uranium tails (DUF6) were stripped to 0.3% under EN's contract with the enricher. (As previously stated, DOE did not enter into any agreement or contract with USEC.) After feeding the DUF6, the depleted tails became the property and sole responsibility of the enricher for disposal. Stripping the DUF6 down to 0.3% based on the market price of the uranium at the time the Uranium Tails Pilot Project (Pilot) was proposed was not considered to be an unreasonable value. Having the enricher take title and responsibility for the depleted tails are standard contract terms and conditions used in the enrichment industry.

QUESTION FROM REPRESENTATIVE STUPAK

Q14g. Does DOE intend to conclude similar arrangements with BPA in the future?

A14g. Currently there are no additional Pilots or follow-on actions being planned with EN/BPA.

QUESTION FROM REPRESENTATIVE STUPAK

Q16. Do DOE's 2007 Financial Statements include the value of DOE's high-assay depleted uranium tails? If so, what value is attached to the high-assay tails as part of the overall valuation of nuclear materials in inventory? If not, does DOE plan to declare any of the high-assay tails as an "asset" instead of a liability during this fiscal year?

A16. The Department's FY 2007 financial statements do not include a dollar amount associated with the subject depleted uranium tails. At this time DOE has no plans for recording an asset value for this material in fiscal year 2008 in anticipation of a potential future sales estimated value. Generally Accepted Accounting Principles would normally preclude DOE from recognizing such "unrealized" gains.

Department of Energy
Washington, DC 20585

September 5, 2008

The Honorable Bart Stupak
Chairman
Subcommittee on Oversight and Investigations
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

On April 3, 2008, Dennis Spurgeon, Assistant Secretary, Office of Nuclear Energy, testified regarding "Selling the Department of Energy's Depleted Uranium Stockpile: Opportunities and Challenges." On August 8, 2008, we sent you the answers to 10 questions for the hearing record.

Enclosed are the answers to nine questions that were submitted by you and Representative Dingell for the hearing record. The remaining responses are being prepared and will be forwarded to you as soon as possible.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Lillian Owen, at (202) 586-2031.

Sincerely,

Lisa E. Epifani
Assistant Secretary
Congressional and Intergovernmental Affairs

Enclosures

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QUESTION FROM REPRESENTATIVE DINGELL

Q6. To what company did DOE issue a contract to prepare the National Environmental Policy Act (NEPA) analysis related to depleted uranium? What is the scope of this contract? Does this cover re-enrichment or auctioning of tails?

A6. The contract was awarded to Battelle Memorial Institute on March 4, 2008. The scope was initially to assess the conversion of depleted uranium and natural uranium to low enriched uranium, including enrichment, transportation, and storage. The scope has been amended to include the sale of depleted and natural uranium as an alternative means of disposition.

QUESTION FROM REPRESENTATIVE DINGELL

Q7. Please provide a detailed schedule for this NEPA analysis, including completion dates.

A7. The contract was awarded based on a January 29, 2008, request for proposals issued by the Idaho National Laboratory. Notice of award to Battelle Memorial Institute was sent on March 4, 2008. Battelle is presently conducting its analysis under the contract. The original request for proposals anticipated a completion and delivery of the final Environmental Assessment six months after signing. This would have been early September 2008 based on the date of notice of award to Battelle. Given the additional scope of work identified in response to Q6, the completion date was delayed. Depending upon the results of that analysis, a determination will be made regarding whether further NEPA analysis is required.

QUESTION FROM REPRESENTATIVE DINGELL

Q8. Who is the responsible decision-maker with respect to the NEPA analysis?

A8. The responsible decision maker is Dennis R. Spurgeon, Assistant Secretary for Nuclear Energy.

QUESTION FROM REPRESENTATIVE STUPAK

Q3. Did you help launch USEC's advanced centrifuge program during your tenure at USEC?

A3. Yes.

QUESTION FROM REPRESENTATIVE STUPAK

Q4. Are you aware of USEC's interest in securing a $2 billion loan guarantee from DOE for USEC's advanced centrifuge facility?

A4. Yes, we are aware of USEC's interest in securing a $2 billion loan guarantee for an advanced centrifuge facility from company press releases and publicly available filings with the Securities and Exchange Commission.

QUESTION FROM REPRESENTATIVE STUPAK

Q12. You testified that over the past 2 years you spent about 10 percent of your time managing DOE's excess uranium, and estimated that about 20 percent of your time was spent on the Global Nuclear Energy Partnership (GNEP). Later in the hearing, you stated, with respect to the front end of the fuel cycle, "I probably overestimated.....some of the time that I might spend on this particular aspect of it." With the benefit of access to your calendar, staff, and records, please clarify the record with respect to the following questions:

a. What percentage of your time have you spent on GNEP over the past two years, including related travel?
b. What percentage of your time have you spent on the management of DOE's excess uranium in the past two years, including related travel?
c. What percentage of your time have you spent on the management of DOE's excess depleted uranium in the past two years, including related travel?

A12. I do not maintain a log of the time I spend devoted to any particular issue. As such, I can provide approximate estimates.

a. I have spent approximately 20% of my time devoted to work related to the Global Nuclear Energy Partnership, including the Advanced Fuel Cycle Initiative, over the past two years.

b. I have spent less than 5% of my time devoted to work related to DOE's excess uranium over the past two years.

c. I have spent approximately less than 1% of my time devoted to work related to DOE's excess depleted uranium over the past two years.

QUESTION FROM REPRESENTATIVE STUPAK

Q13. Please provide a list of all individuals in DOE who have been working on realizing value from DOE's depleted uranium stockpile over the past two years. Please estimate the percentage of time each individual spent on depleted uranium.

A13. Individuals who have participated in analyzing matters potential alternatives relating to the management of DOE's depleted uranium stockpile over the past two years are located in the Offices of Nuclear Energy and Environmental Management with support from other offices within the Department as warranted. These individuals have also worked on DOE's plan to disposition its excess uranium inventories have also worked on many other projects in the past two years. Relative to their time working on these projects, the time spent on matters relating to DOE's depleted uranium stockpile is very limited, most likely less than one percent over the number of hours for the past two years. The following program office individuals are listed based on their relative time, starting with the greater percent of time spent:

Edwin Rutkowski	Office of Nuclear Energy
William Murphie	Office of Environmental Management
Ross Bradley	Office of Environmental Management
Ines Triay	Office of Environmental Management
Edward McGinnis	Office of Nuclear Energy
John Sheppard	Office of Environmental Management
Christopher Guith	Office of Nuclear Energy
Dennis Spurgeon	Office of Nuclear Energy
James Rispoli	Office of Environmental Management
Ronald Hagen	Office of Nuclear Energy
William Szymanski	Office of Nuclear Energy

QUESTION FROM REPRESENTATIVE STUPAK

Q15. Last year, draft legislation was circulated by USEC and other regarding depleted uranium. Sections of the proposed legislation directed DOE to transfer 25,000 MT of high-assay tails to USEC, provide a loan of 3,000 MT of uranium to Louisiana Energy Services, L.P. (LES), a uranium enricher building a plant in New Mexico, and provide benefits to other fuel cycle interests.

a. Were you made aware of this legislative proposal to assist the front end of the domestic uranium fuel cycle?
b. Did you conduct meetings with USEC to discuss the draft legislation? If so, on what dates?
c. Did you discuss this proposal with the Secretary of Energy? If so, how did you advise the Secretary?
d. Did you support or oppose this proposal?

A15a. Yes, I was made aware of several such proposals primarily in the context of requests from Congressional staff for briefings related to the programmatic impact of these proposals and in which staff in the Office of Nuclear Energy participated.

b. No, I did not conduct meetings with USEC to discuss the draft legislation.

c. No, I did not discuss these proposals with the Secretary of Energy.

d. I did not take an official position on this proposal.

QUESTION FROM REPRESENTATIVE STUPAK

Q17. Does DOE have a contingency plan to assume operations at the Paducah Gaseous Diffusion Plant should USEC become financially unable to continue enrichment operations? Please provide a title to this contingency plan. Please summarize the key elements of this contingency plan and provide the names of DOE staff who prepared this plan.

A17. DOE does not have a contingency plan to assume operations at the Paducah Gaseous Diffusion Plant should USEC become financially unable to continue enrichment operations.

Department of Energy
Washington, DC 20585

July 9, 2008

The Honorable Bart Stupak
Chairman
Subcommittee on Oversight and Investigations
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

On June 5, 2008, we sent you the edited Transcript of the April 3, 2008, testimony given by Dennis Spurgeon, Assistant Secretary, Office of Nuclear Energy, regarding "Selling the Department of Energy's Depleted Uranium Stockpile: Opportunities and Challenges."

Enclosed are three Inserts requested by you and Chairman Dingell for the hearing record. Responses to the remaining Inserts are being prepared and will be forwarded to you as soon as possible.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Lillian Owen, at (202) 586-2031.

Sincerely,

Lisa E. Epifani
Assistant Secretary
Congressional and Intergovernmental Affairs

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COMMITTEE: HOUSE ENERGY & COMMERCE SUBCOMMITTEE ON OVERSIGHT & INVESTIGATIONS

HEARING DATE: APRIL 3, 2008

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PAGE: 42, LINE: 839-850

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DOE does not concur with GAO's opinion. DOE is vested with the authority and responsibility to interpret and implement the Atomic Energy Act (AEA) and other statutes and regulations applicable to the sale and transfer of uranium, and has made the determination that the AEA grants the Department broad authority to sell or transfer depleted uranium. Section 3112 of the USEC Privatization Act provides an overlay to the exercise of that authority by the Department in certain specified situations; it neither grants any new authority nor rescinds any existing authority. Section 3112 does not address the exercise of the Department's existing authority with respect to depleted uranium.

801 Mr. {Stupak.} As GOA--GAO--I am having a rough time
802 today. It sounds like you don't have a specific policy on
803 how to handle this.
804 Mr. {Spurgeon.} We issue a request for expressions of
805 interest when we need that to be able to inform a particular
806 procurement action. The one that probably is, I would say,
807 in the lead right now is some of our off-spec material
808 because of the urgency associated with the containers that
809 that off-spec material happens to be held in. So we are
810 proceeding forward on dual tracks here, not just a single
811 track relative to--
812 Mr. {Stupak.} All right. Well, let me help you out a
813 little bit here. Nuclear energy, which is going to testify
814 later, in their testimony indicates that the utilities which
815 own 53 actors or more than half of the 103 actors in U.S.
816 have indicated an interest--
817 Mr. {Spurgeon.} Yes, sir.
818 Mr. {Stupak.} --in your high-assay tails. Isn't this
819 sufficient information for DOE to make a decision to direct
820 test market interest?
821 Mr. {Spurgeon.} We are aware of that interest. We are
822 aware of the interest in a number of people. So we are very
823 confident that we will have sufficient interest in the tails
824 in order to have a process that will allow us to get fair

825 value to the government.

826 Mr. {Stupak.} All right. Well, the GAO says that the

827 DOE's legal interest or legal--let me quote now--``authority

828 to sell or transfer tails in their current form is doubtful''

829 because no part of USEC Privatization Act ``specifies

830 conditions under which depleted uranium may be sold.'' Do

831 you agree with GAO's legal opinion?

832 Mr. {Spurgeon.} Sir, as the secretary's statement said,

833 the department does have broad authority under the Atomic

834 Energy Act to sell, transfer, and otherwise utilize its

835 inventories of depleted natural and enriched uranium.

836 Mr. {Stupak.} Okay, but GAO says they doubt you have

837 the authority. So do you believe they do other than this

838 broad discretion?

839 Mr. {Spurgeon.} Sir, we are not aware of anything that

840 has happened that would repeal that broad authority that we

841 have. However, the department has not yet received and we do

842 not yet have an analysis of the GAO's opinion. That is

843 something--I would be glad to take that issue for the record

844 and have our--

845 Mr. {Stupak.} Well, when would you be in a position to

846 tell us and be able to advise the committee whether or not

847 you would need the legal authority or have the legal

848 authority?

COMMITTEE:	HOUSE ENERGY & COMMERCE SUBCOMMITTEE ON OVERSIGHT & INVESTIGATIONS
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On May 5, 2008, the Department of Energy (DOE) provided in response to Representatives John Dingell and Bart Stupak's April 24, 2008 letter, documents related to the nomination of Assistant Secretary Spurgeon, ethics reviews and assessments concerning his former employment relationships, and his financial disclosure statements.

In addition, on May 30, 2008, DOE counsel met with Subcommittee on Oversight and Investigations staff to review the materials submitted pursuant to the Chairmen's May 5, 2008 letter and to answer questions.

Accordingly, DOE believes that it has been responsive to Chairman Dingell's requests related to this issue.

1408 USEC.

1409 Mr. {Spurgeon.} If there was something that happened

1410 positive to USEC, obviously it would be a benefit to the

1411 employees of the company.

1412 The {Chairman.} Now, have you ever recused yourself

1413 from dealing with your former company and friends and

1414 colleagues at USEC?

1415 Mr. {Spurgeon.} No, sir.

1416 The {Chairman.} Have you got authorization or an

1417 opinion from the ethics officers at the Department of Energy

1418 which says that you should or should not recuse yourself?

1419 Mr. {Spurgeon.} Yes, sir. My former employment was--

1420 and any restrictions on what I could do was thoroughly vetted

1421 at the time prior to my nomination for the current position.

1422 The {Chairman.} Will you submit that to the committee

1423 please?

1424 Mr. {Spurgeon.} I think we did, did we not?

1425 The {Chairman.} I am assuming this is in writing. So I

1426 am assuming that you can submit this to the committee.

1427 Mr. {Spurgeon.} I believe we did already, but--because

1428 I think it was asked for.

1429 The {Chairman.} Well, appreciate if you did so. Does

1430 the Secretary of Energy know you have not recused yourself?

1431 Mr. {Spurgeon.} Yes, sir. The Secretary of Energy

1432 knows I have no recusals whatsoever.

1433 The {Chairman.} I think my time is about expired, Mr.

1434 Chairman. I will wait for a second time.

1435 Mr. {Stupak.} You still got two minutes, Mr. Dingell.

1436 We went 10 minutes on this, and the recusal statement would

1437 be Exhibit Number 12 in our book.

1438 The {Chairman.} Well, I will proceed at the pleasure of

1439 the chair.

1440 Mr. {Stupak.} Please continue.

1441 The {Chairman.} Has your--I will repeat this question.

1442 Have you got a legal opinion from the legal counsel at DOE on

1443 your recusal and whether you should be recused or not?

1444 Mr. {Spurgeon.} I don't happen to be a lawyer, but I do

1445 know that it was determined prior to my being nominated that

1446 I was not required to recuse myself from any activities with

1447 any company upon my confirmation as assistant secretary.

1448 The {Chairman.} Would you please submit that to the

1449 committee if you could?

1450 Mr. {Spurgeon.} Yes, sir, if it--

1451 The {Chairman.} All right.

1452 Mr. {Spurgeon.} --whatever exists.

1453 The {Chairman.} Now, this question for Mr. Fertel.

1454 Isn't it the case, Mr. Fertel, that there are utility

1455 companies where members of the Nuclear Energy Institute that

COMMITTEE: HOUSE ENERGY & COMMERCE SUBCOMMITTEE ON OVERSIGHT & INVESTIGATIONS

HEARING DATE: APRIL 3, 2008

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As we understand the question, Mr. Stupak asks whether DOE is willing to commit at this time to provide a copy, to GAO or the committee, of any future sole source contract entered into between DOE and USEC for sale or re-enriching of depleted uranium. DOE has no current plans to enter into such a hypothetical sole source contract with USEC. Subject to any applicable privileges or restrictions, DOE will respond appropriately to any proper request from the GAO or the committee.

1600 a train wreck or to cause a train wreck?

1601 Mr. {Spurgeon.} Sir, I will do whatever--you know, I am

1602 not going to make a commitment that I can't follow.

1603 Mr. {Stupak.} Then how can we ensure transparency then?

1604 So the questions that I am sure are a little uncomfortable

1605 for you and a little uncomfortable for us to ask you, that we

1606 have that transparency so those questions are cleared up and

1607 there is no question about what is going on. Because if you

1608 look at tab 12, again the one in front of you, your recusal,

1609 it only says you are to recuse yourself from family

1610 interests. You are not recused from any other matter

1611 including your former employer. So I would think that boy,

1612 that is almost a conflict when you go from the CEO of USEC

1613 right into the decision making process on how whether we

1614 auction or do a sole source contract to USEC. You will make

1615 the decision, right, to make the recommendation to the

1616 secretary on which way we go? You will make that decision to

1617 make the recommendation after you gather all the information.

1618 Mr. {Spurgeon.} Well, I want to make clear the prime

1619 contracting responsibility for disposition of our tails is

1620 our environmental management organization.

1621 Mr. {Stupak.} Who is going to make the recommendation

1622 to you. They are under--

1623 Mr. {Spurgeon.} Well no, he is going to make the

1624 recommendation to the secretary as well. He does not report
1625 to me in any sense of the word.
1626 Mr. {Stupak.} Well, I thought you were head of all
1627 nuclear policies.
1628 Mr. {Spurgeon.} From a policy standpoint. To integrate
1629 our department-wide policy on disposition of all of our--
1630 Mr. {Stupak.} Sure.
1631 Mr. {Spurgeon.} --assets so that we are coordinated.
1632 Mr. {Stupak.} So you would be involved--
1633 Mr. {Spurgeon.} It is a coordinating function.
1634 Mr. {Stupak.} And you would be involved in that
1635 decision making? You would coordinate with this management
1636 group.
1637 Mr. {Spurgeon.} We try to coordinate our actions within
1638 the department. Yes, sir. But I do not control the
1639 contracts from the Environmental Management Organization in
1640 any way, shape, or form.
1641 Mr. {Stupak.} So then there shouldn't be an objection
1642 then, if there is a contract, to share it with GAO to make
1643 sure that we are getting the best bid for the taxpayer and
1644 that we are doing it in everyone's best interest, to share it
1645 with GAO and this committee then? There shouldn't be an
1646 objection then.
1647 Mr. {Spurgeon.} That is one that I will take back. I

Department of Energy
Washington, DC 20585

September 29, 2008

The Honorable Bart Stupak
Chairman
Subcommittee on Oversight and Investigations
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

On June 5, 2008, we sent you the edited transcript of the April 3, 2008, testimony given by Dennis Spurgeon, Assistant Secretary, Office of Nuclear Energy, regarding "Selling the Department of Energy's Depleted Uranium Stockpile: Opportunities and Challenges." On July 9, 2008, we sent you three inserts requested by you and Chairman Dingell.

Enclosed are the remaining three inserts requested by you and Chairman Dingell for the hearing record.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Lillian Owen, at (202) 586-2031.

Sincerely,

Lisa E. Epifani
Assistant Secretary
Congressional and Intergovernmental Affairs

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COMMITTEE:	HOUSE ENERGY AND COMMERCE SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
HEARING DATE:	APRIL 3, 2008
WITNESS:	DENNIS R. SPURGEON PAGE: 63, LINE: 1317-1335

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Individuals who have participated in efforts to realize value from DOE's depleted uranium stockpile over the past two years are located in the Offices of Nuclear Energy and Environmental Management with support from other offices within the Department as warranted. These individuals have also worked on DOE's plan to disposition its excess uranium inventories as well as many other projects in the past two years. Relative to their time working on these projects, the time spent on matters relating to DOE's depleted uranium stockpile is very limited, most likely less than one percent over the number of hours for the past two years. The following program office individuals are listed based on their relative time, starting with the greater percent of time spent:

Edwin Rutkowski	Office of Nuclear Energy
William Murphie	Office of Environmental Management
Ross Bradley	Office of Environmental Management
Ines Triay	Office of Environmental Management
John Sheppard	Office of Environmental Management
Christopher Guith	Office of Nuclear Energy
James Rispoli	Office of Environmental Management
Ronald Hagen	Office of Nuclear Energy
William Szymanski	Office of Nuclear Energy
Edward McGinnis	Office of Nuclear Energy
Dennis Spurgeon	Office of Nuclear Energy

1265 The {Chairman.} Third of all, when it suits the chair,
1266 I would be grateful for a chance to ask a few little
1267 questions.
1268 Mr. {Stupak.} Questions? Now would be the time, sir.
1269 The {Chairman.} To Mr. Robinson. Didn't the GAO find
1270 that DOE is sitting on an enormous windfall in the form of
1271 depleted uranium that as recently as a few years ago was
1272 deemed to be waste but today is worth $7.6 billion? Is that
1273 right?
1274 Mr. {Robinson.} That is our analysis. Yes, sir.
1275 The {Chairman.} Now, and if we were to reprocess that
1276 uranium, we would be addressing both a moneymaking
1277 opportunity but also a chance to clean up what is potentially
1278 a significant environmental problem. Is that not so?
1279 Mr. {Robinson.} The disposition options that we laid
1280 out to include re-enriching would accomplish those
1281 objectives. Yes, sir.
1282 The {Chairman.} Now, I believe the GAO has found DOE
1283 has been working on a uranium sales strategy for nearly three
1284 years?
1285 Mr. {Robinson.} Yes, sir.
1286 The {Chairman.} And isn't it also true that GAO found
1287 that DOE has not completed its plans with sufficient speed to

1288 take advantage of current market conditions?

1289 Mr. {Robinson.} Our judgment is is that a more

1290 detailed, comprehensive plan and strategy is in order, and

1291 that would facilitate the sales and return maximum value to

1292 taxpayers.

1293 The {Chairman.} Now, I believe that GAO also found that

1294 8 out of 10 utilities interviewed by the GAO had interest in

1295 bidding on this excess uranium. Is that right?

1296 Mr. {Robinson.} Yes, they expressed general interest.

1297 Yes, sir.

1298 The {Chairman.} Now, Mr. Robinson, in your opinion,

1299 would it be a prudent first step for DOE to issue a request

1300 for information to identify the legal and market-related

1301 issues so that DOE could commence a successful auction?

1302 Mr. {Robinson.} Yes, sir. The most information

1303 possible on what the interest is out there to purchase these

1304 tails, if that is the option that is a, decided to be the

1305 best one, and b, legal, that would be a good step. Yes, sir.

1306 The {Chairman.} Now, is there any reason in your mind

1307 why DOE should not move promptly to realize as much of the

1308 $7.6 billion in value as soon as possible, recognizing that

1309 there are short-term constraints on re-enriching tails and

1310 constraints on how much the market could absorb?

1311 Mr. {Robinson.} Speedy action to take advantage of the

1312 current high price of uranium is in order, keeping in mind
1313 that, you know, a few years ago it was essentially worthless.
1314 A few months ago, it was essentially worth three times what
1315 we think it is worth now. So prices are fairly volatile,
1316 yes.
1317 The {Chairman.} Now, these questions to Mr. Spurgeon.
1318 Mr. Spurgeon, what percentage of your time has been spent
1319 advancing the global nuclear energy partnership over the past
1320 year?
1321 Mr. {Spurgeon.} I would totally guess, sir, because I
1322 don't keep a clock, but something like maybe 20 percent.
1323 The {Chairman.} Okay, now what percentage of your time
1324 has been spent the last two years developing a strategy to
1325 derive value from DOE's excess depleted uranium stockpiles?
1326 Mr. {Spurgeon.} I have spent--I am going to again
1327 guess--maybe half of that, 10 percent. Again I don't keep a
1328 clock on myself.
1329 The {Chairman.} Has anybody else spent any time on this
1330 question?
1331 Mr. {Spurgeon.} There are a number of people that have
1332 spent time on this--
1333 The {Chairman.} I would like you to give us, submit for
1334 the record please, who has done what with regard to these
1335 matters at DOE. Now, Mr. Spurgeon, given GAO's findings,

COMMITTEE: HOUSE ENERGY AND COMMERCE SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS

HEARING DATE: APRIL 3, 2008

WITNESS: DENNIS R. SPURGEON
PAGE: 65, LINE: 1349-1365

INSERT FOR THE RECORD

The draft Environmental Assessment (EA) is expected to be completed this fall, and the final EA is currently expected to be completed by the end of this year.

1336 what are your immediate plans to take advantage of current
1337 market conditions and convert this depleted uranium into cash
1338 for the American people?
1339 Mr. {Spurgeon.} Step one is the secretary initiated and
1340 released a policy statement on how we were going to proceed
1341 forward. Step two is that we have underway an environmental
1342 assessment which is required by the National Environmental
1343 Policy Act prior to us enriching uranium for ultimate sale as
1344 part of this. Step three is we are doing, as the GAO has
1345 recommended, the cost/benefit analysis of the best value and
1346 weigh in which to dispose of the current inventory of not
1347 only our depleted uranium but our natural uranium and our
1348 high enriched uranium.
1349 The {Chairman.} Now, what is the date by which you and
1350 DOE are going to be able to sell off or auction off these
1351 tailings? What time? This month, this year, this decade?
1352 When?
1353 Mr. {Spurgeon.} For going forward with enrichment, we
1354 would require a suitable finding, a record of decision by the
1355 secretary following preparation of the necessary
1356 environmental analysis. That, while it is underway, would
1357 some time this fall is my estimate.
1358 The {Chairman.} This fall?
1359 Mr. {Spurgeon.} Late summer, this fall. Yes, sir. I

1360 don't control the schedule, but that is a guess.

1361 The {Chairman.} I am going to ask you to procure for

1362 the committee a statement signed by the secretary indicating

1363 the date on which that will be completed. And I will ask

1364 that the record be held open so that we may receive that.

1365 You understand what you have been requested to do, sir?

1366 Mr. {Spurgeon.} A schedule for completion of the

1367 environmental assessment, Environmental Policy Act

1368 requirements. Yes, sir.

1369 The {Chairman.} Now, who controls the schedule down

1370 there? You or the secretary or who?

1371 Mr. {Spurgeon.} Well, there is obviously--any time you

1372 get into this arena, there are a number of people involved.

1373 The program office principally responsible for this is our

1374 environmental management organization when we get down to

1375 actually dispositioning this material.

1376 The {Chairman.} So--

1377 Mr. {Spurgeon.} But the general counsel's office is

1378 very much involved in--

1379 The {Chairman.} So who is your responsible decision

1380 maker? It is always nice to know who has the responsibility

1381 for making the decision, and if DOE doesn't know who that is,

1382 we have a bit of a problem, don't we?

1383 Mr. {Spurgeon.} I am responsible for nuclear policy,

COMMITTEE: HOUSE ENERGY & COMMERECE SUBCOMMITTEE ON OVERSIGHT & INVESTIGATIONS

HEARING DATE: APRIL 3, 2008

WITNESS: DENNIS SPURGEON
PAGE: 82/LINES: 1769-1784

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Bonneville Power Administration (BPA) Energy Northwest Deal

I'm advised that the comparison of the $7 million number with the $220 million number for the Pilot Project involving Bonneville Power Administration (BPA) and Energy Northwest (EN) is not an accurate comparison since it doesn't take into consideration: the estimated savings for the Department of Energy's (DOE's) Office of Environmental Management (DOE-EM) in avoided tails disposal costs; the risk inherent in what was an initial Pilot Project; and significantly, the time frame at which estimated benefits of the transaction were developed.

At the time that the Pilot was negotiated, both DOE-EM and EN/BPA anticipated that the financial benefits received by DOE-EM and the U.S. Treasury (Treasury) would be roughly equal to the future fuel savings that Energy Northwest (EN) and Bonneville Power Administration (BPA) would receive. DOE-EM would be compensated $2,200 per cylinder for each time a cylinder was transported and would collect for the Treasury $10,450 for each cylinder that was successfully processed for a total cash payment of $8.5 million for the Pilot Project. More significantly, DOE-EM would also avoid disposal costs of $30 million - $34 million ($3.5- $4.0 per Kg) for the 8.5 thousand metric tons of Depleted Uranium Hexafluoride (DUF6) the Pilot consumed. Thus, the

total estimated benefits to DOE-EM at the time the parties entered into the Pilot Project was approximately $38 to $42 million. [1]

The market value of natural uranium at the time the Pilot Project was proposed in the fall of 2004 was $62 per Kg. The DUF6 to be processed as part of the Pilot was estimated by EN to have a market value of $112 to $123 million based on the estimated recoverable U-235 content. This estimated market value, however, did not account for expenditures needed to process the DUF6 in order to recover the U-235 content of the material. EN originally estimated it would spend $87 million on the Pilot not including financing charges, consisting of $78.4 million for enrichment services and $8.5 million in compensation to DOE-EM for transportation and the DUF6. Thus, EN/BPA's estimate of net future fuel savings at that time was $25-$36 million, and not $220 million.

Thus, at the time the parties entered into the Pilot, both DOE-EM and EN/BPA anticipated roughly commensurate financial benefits from the Pilot Project: DOE-EM expecting benefits of $30-34 million in avoided disposal costs; BPA/EN expecting benefits of approximately $25-$36 million in avoided fuel purchase costs. In addition, about $8.5 million less handling costs would be provided to the US Treasury.[2]

The respective benefits to DOE-EM and EN/BPA expected from the Pilot were also considered in association with Pilot risks. In contrast to purchasing on the open market, the DUF6 supplied by DOE-EM for the Pilot came without any warranties or representations as to: merchantability; fitness for a particular purpose; or that the cylinders or material delivered would not result in injury or damage when used. EN/BPA

[1] The cost avoided in terms of disposal costs to EM is now estimated to be closer to $50 million, based on the more recent cost estimates for the DUF6 Conversion Project.
[2] DOE returned $8,386,400 to the US Treasury.

also assumed the risk for arriving at an equitable arrangement for the re-enrichment with USEC and for financing the cost for re-enrichment.

Significantly, this Pilot Project's primary purpose was to evaluate the usability of a portion of DOE's DUF6 inventory in lieu of disposal, and to determine if the concept of re-enrichment could be practically implemented. At the time the Pilot was proposed in the fall of 2004, the estimated financial benefits to DOE-EM/Treasury for the estimated natural uranium to be produced from the DUF6 was considered adequate compensation for a demonstration program designed to determine if DUF6 scheduled for disposal could be economically processed into a commercial nuclear fuel product. This consideration of adequate compensation was based on DOE-EM's savings in avoided disposal costs, lack of any warranty provided on the DUF6 to be supplied for the Pilot, and critical data DOE-EM would obtain on the material condition of the DUF6 inventory.

The allocation of expected benefits and costs to DOE-EM and BPA/EN on estimates made at the inception of the Pilot Project in 2004 have since changed. The rapid rise in uranium prices during the period of the Pilot increased cost savings to EN/BPA for avoided fuel costs far beyond the original estimate. The actual Pilot cost incurred by EN/BPA was $126 million (including $31 million for bond financing), which was higher than the initial estimate. DOE-EM's updated estimate for avoided disposal costs for the DUF6 under the Pilot has grown by approximately $15 million since the 2004 estimate.

When the Pilot Project was negotiated, neither party (DOE-EM and BPA/EN) predicted such a rapid rise in uranium prices would occur during the short period of the Pilot Project. If the market value of uranium had reversed due to other market

conditions, the Pilot Project would have resulted in somewhat higher nuclear fuel costs for EN/BPA as compared to what EN had been paying for nuclear fuel in inventory or for purchasing the uranium on the open market. The EN/BPA analysis compares projected savings 18 months after the November 2006 spot market price to reach a projected $220 million of savings for EN/BPA. DOE/EM believes a better comparison would be to compare the DOE-EM cost avoided to the price of uranium at the time of the negotiated agreement, which was equitable at the time.

1768 employees can benefit. Thank you.

1769 Mr. {Stupak.} Very good. Since I brought it up, let me

1770 ask you this then, Mr. Spurgeon, since it is part of our

1771 concerns up here. 2005, DOE transferred about 18,500 metric

1772 tons of high assay tails to the Bonneville Power

1773 Administration, which had had to be re-enriched by USEC.

1774 This uranium will be used to make fuel for the Columbia

1775 generating stations run by Energy Northwest. The U.S.

1776 Treasury received only $7 million for the high assay tails

1777 where Bonneville Power Administration estimates that it saved

1778 $220 million on fuel costs under the deal. What would be the

1779 basis for only receiving $7 million back when the benefit is

1780 $220 million?

1781 Mr. {Spurgeon.} I will have to take that question for

1782 the record, sir. That happened to be during a period in time

1783 when I was not at USEC and I was not in the Department of

1784 Energy. I was happily playing golf in Florida.

1785 Mr. {Stupak.} Okay, well we appreciate the fact that

1786 the rate payers up in the Northwest may receive a break and a

1787 benefit, but would you consider $7 million equitable

1788 compensation to U.S. Treasury for the value of this uranium

1789 when BPA got about $220 million?

1790 Mr. {Spurgeon.} Sir, you have to look at the

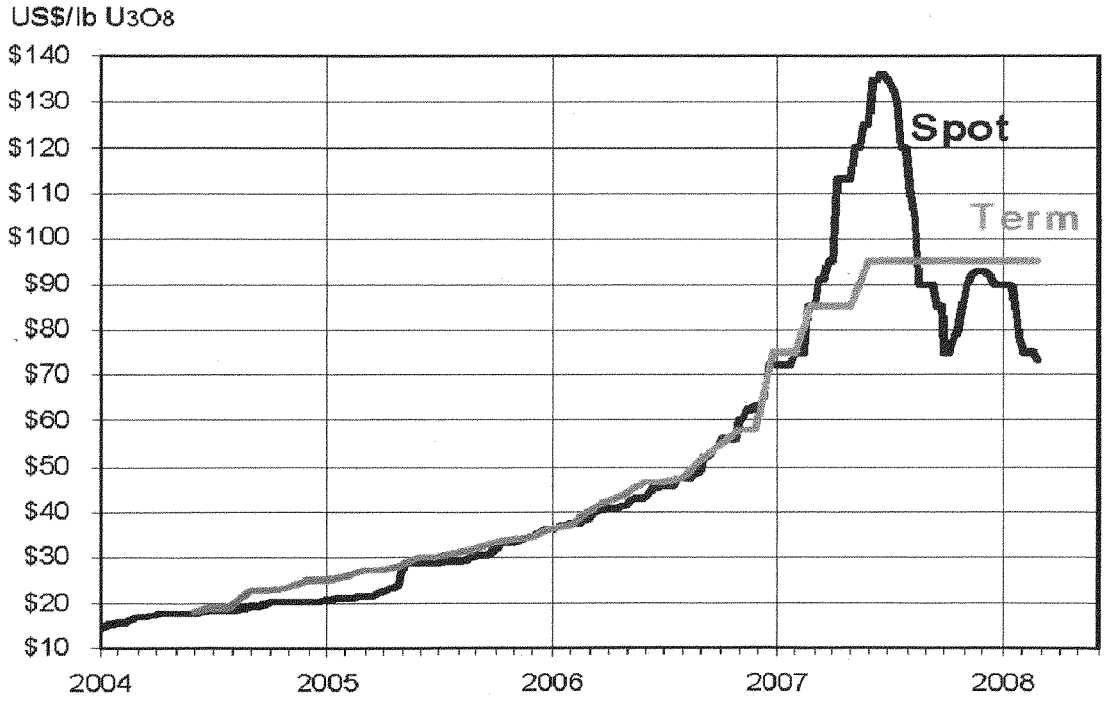
1791 circumstances at the time, and I can't comment on that just

#	Description	Date
1	Committee Slides	
	Correspondence	
2	Letter to GAO from Rep. Dingell, et al, to investigate authorities and agreements between USEC and DOE, etc.	5/23/07
3	Response Letter to GAO from DOE, re: DOE's administration of transaction involving depleted uranium.	12/21/07
4	Letter to DOE Under Secretary Bud Albright, Jr. from Reps. Dingell and Stupak, re: Disposition of DOE's high-assay depleted uranium tails.	2/14/08
5	Response to Reps. Dingell and Stupak from Under Secretary Albright, re: February 14, 2008 letter.	3/12/08
	DOE Documents	
6	DOE Office of Public Affairs Announcement, subject: "DOE Announces Policy for Managing Excess Uranium Inventory."	3/12/08
7	DOE Memos: (1)Legal Review of Uranium Tails Pilot Project and Bonneville Power Administration and (2) "Memo for the Deputy Secretary re: "ACTION: Approve Uranium Tails Pilot Project…"	03/16/05 & 05/10/05
8	Dennis Spurgeon email Re: USEC	11/16/06
9	"DUF6 Pilot Project- An Intradepartmental Transfer of Depleted Uranium" Project Completion Report	10/2/08
10	DOE Excess Uranium Inventory Management- Committee on Energy & Commerce Staff Briefing Slides	3/12/08
11	Inventory of depleted uranium tails	10/2/07
12	Dennis Spurgeon Recusal Statement	4/6/06
	GAO Reports	
13	GAO Report, subject: "Nuclear Material: DOE Has Several Potential Options for Dealing with Depleted Uranium Tails"	3/31/08
	USEC Documents	

14	USEC News Release, re: "USEC Names Dennis Spurgeon as Executive Vice President and Chief Operating Officer" (including USEC proxy statement filed w/ SEC related to Spurgeon employment separation).	6/4/01
	Additional Documents	
15	ConverDyn Document, "UF6 in the US."	March 2008
16	World Nuclear Association Uranium Production Outlook	March 2008
17	NEI member survey-High Assay Depleted Tails	3/26/08
	Correspondence between DOE & GAO	
18	Letter to DOE General Counsel David Hill from GAO General Counsel Susan Sawtelle, re: DUF6.	12/10/07
19	Enclosure to 12/10/07 GAO Letter (Letter to Portsmouth/Paducah Project Office).	5/26/05
20	GAO Response to DOE 12/21/07 Letter.	1/11/08
21	DOE Response to GAO 1/11/07 Letter.	1/25/08
22	DOE Agency Financial Report FY07 (pp. 42-56).	
23	Consolidated Industry Position on Uranium Sales	

Uranium Prices 2004-2008

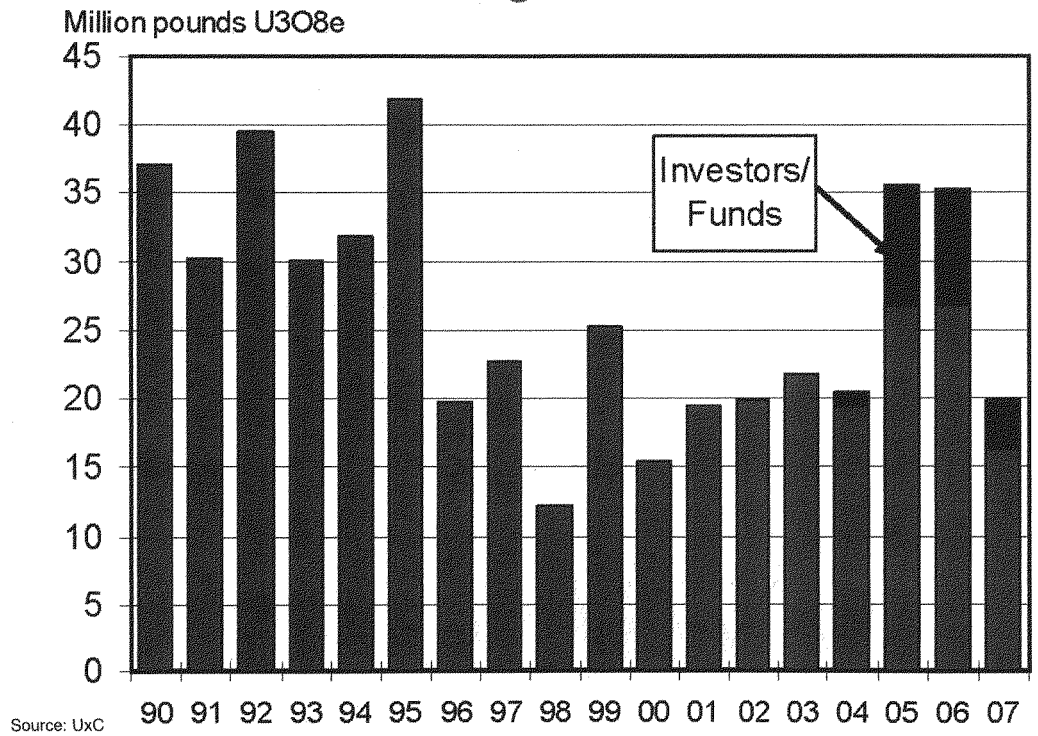
Spot U_3O_8 Price and Long-Term U_3O_8 Price



Source: UxC

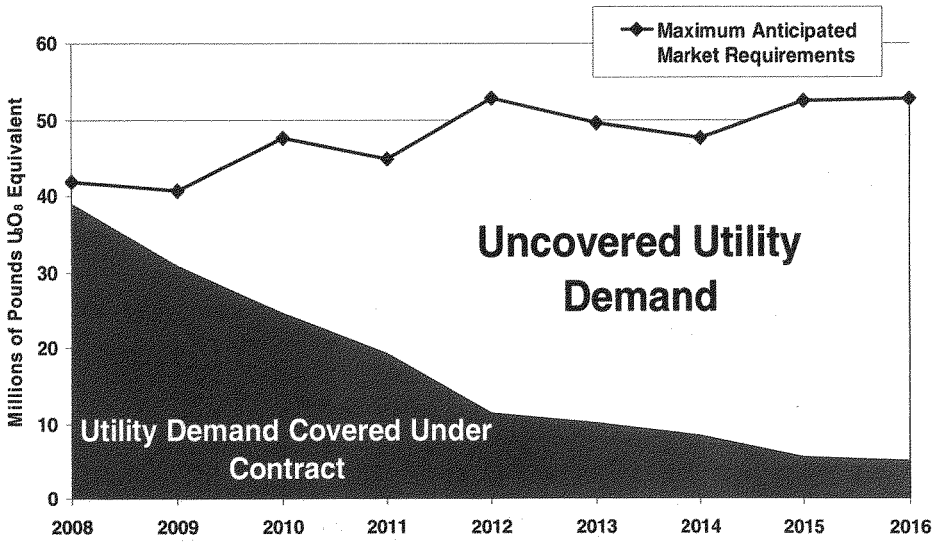
U308 Spot Volumes 1990-2007

Investor/Hedge Funds Identified



Source: UxC

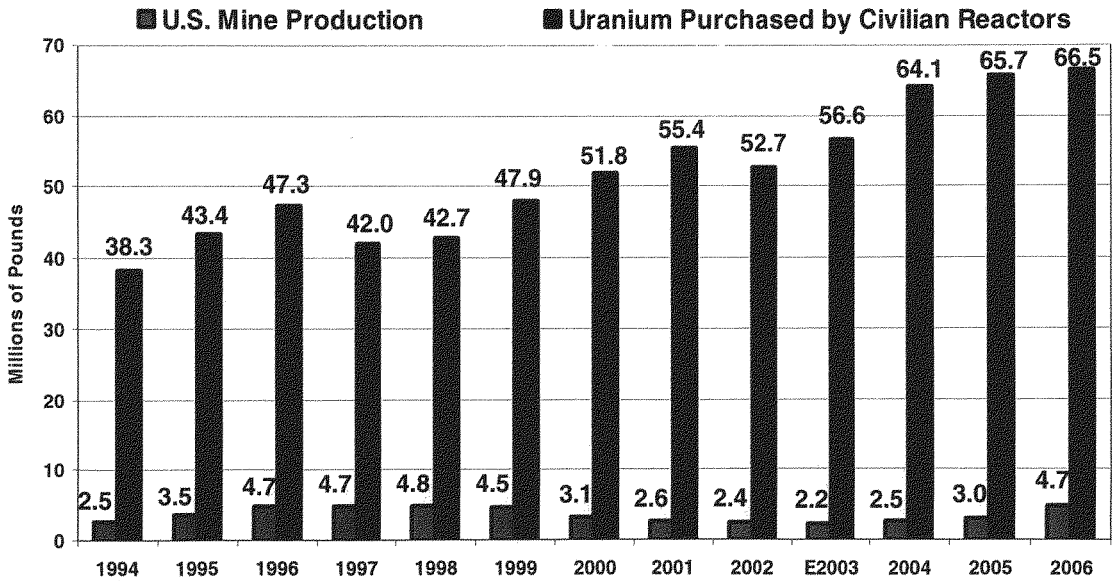
Uncovered Demand for Uranium
U.S. Civilian Nuclear Reactors
2008-2016



Source: EIA Form EIA-858 "Uranium Marketing Annual Survey" (2006)

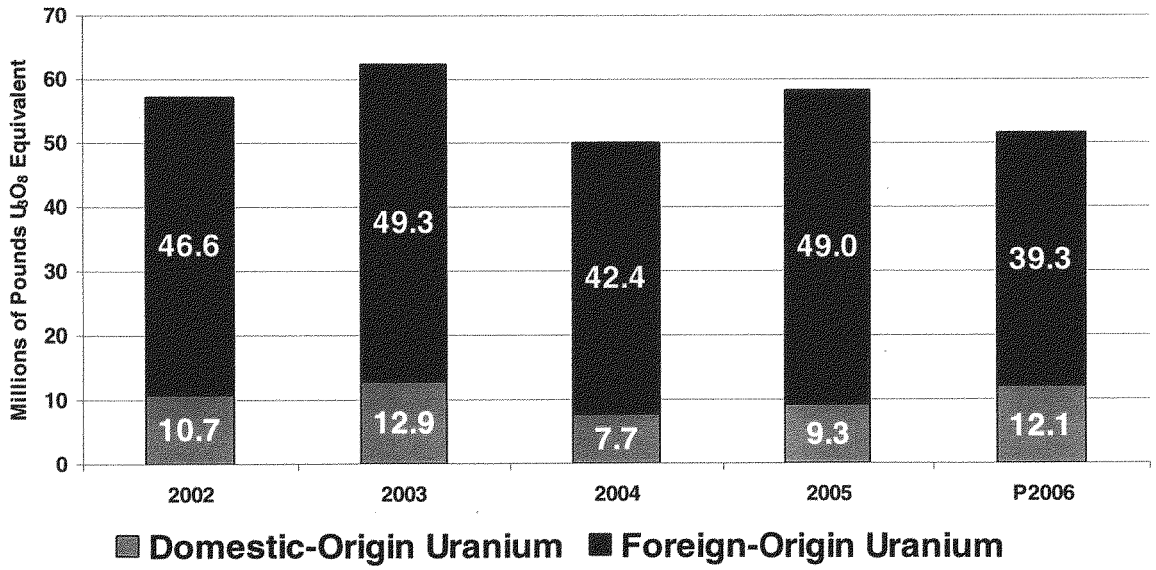
E= values estimated

U.S. Uranium Mine Production vs. Uranium Purchases by U.S. Civilian Reactors 1994-2006 (Millions of Pounds)



E = Estimated data.
Sources: Energy Information Administration: 1993-2002-Uranium Industry Annual. 2003-2006-Domestic Uranium Production Report

Domestic vs. Foreign Uranium Loaded into U.S. Civilian Nuclear Power Reactors
Millions of Pounds (2002-2006)

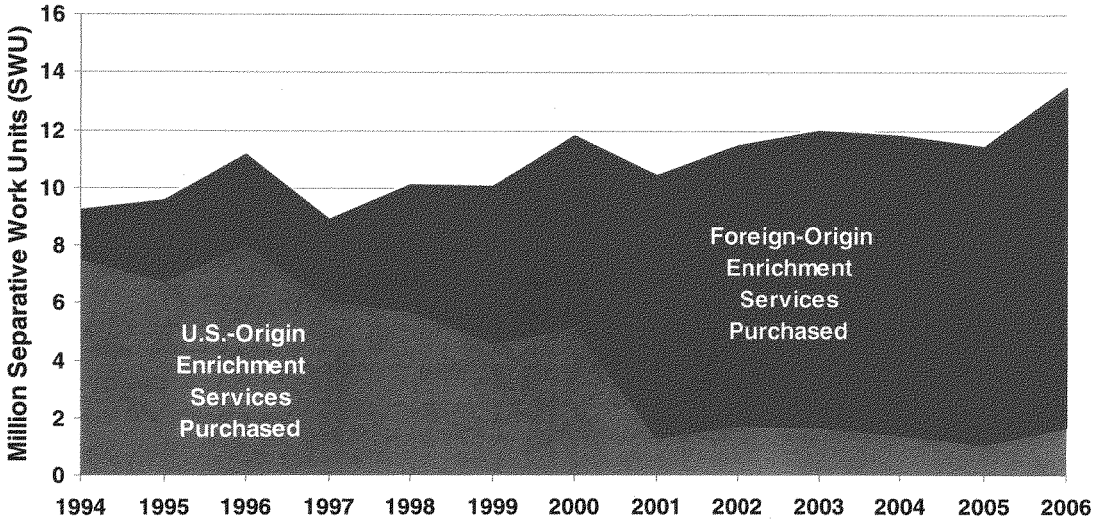


P = Preliminary data. Final 2004 fuel assembly data reported in the 2005 survey.
Source: Energy Information Administration, Form EIA-858 "Uranium Marketing Annual Survey" (2003-2006).

Email from Mr. Spurgeon to the DOE-GC David Hill on a Sole Source Contract Proposal by Energy Solutions and USEC- 9/16/06

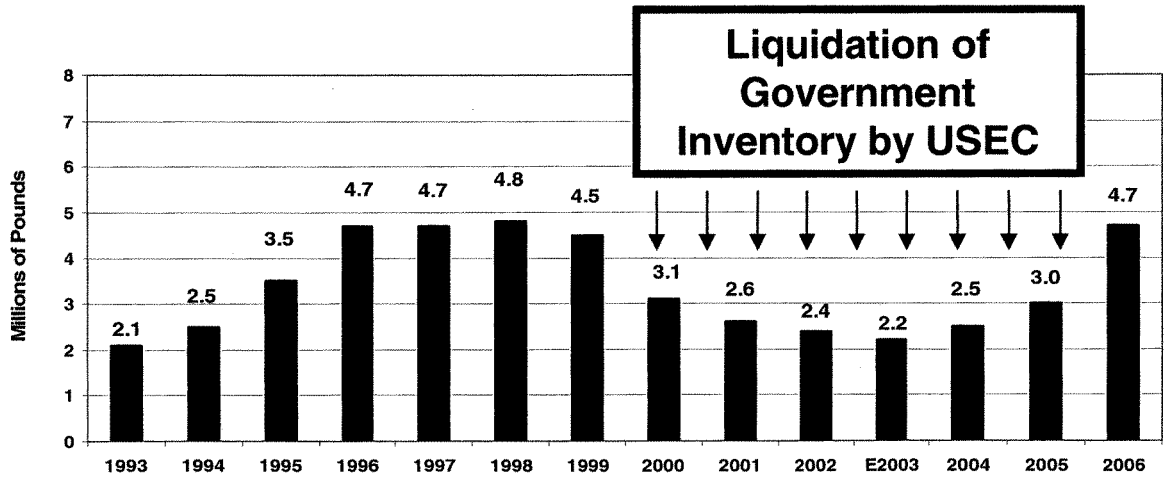
"We are about to have a USEC train wreck that could have serious side effects for nuclear energy in the U.S. Like it or not, DOE is involved. Whether or not we can prevent the train wreck is questionable, but I believe we must try our best."

Foreign vs. Domestic Uranium Enrichment Services Purchased for U.S. Civilian Nuclear Power Reactors 1994-2006



Sources: Energy Information Administration: 1994-2002-Uranium Industry Annual. 2003-2006-Uranium Marketing Annual Report.

U.S. Mine Production of Uranium 1993-2006 (Millions of Pounds)



E = Estimated data.
Sources: Energy Information Administration: 1993-2002-Uranium Industry Annual. 2003-2006-Domestic Uranium Production Report

Congress of the United States

May 23, 2007

The Honorable David M. Walker
Comptroller General of the United States
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Walker:

The production of enriched uranium is a key step to producing the nuclear fuel used in commercial nuclear power plants in the United States and around the world. USEC, Inc. (USEC) currently leases the Department of Energy's (DOE) two uranium enrichment plants in Portsmouth, Ohio and Paducah, Kentucky. USEC currently operates the Paducah Plant which generates approximately 5 million separative work units (SWU) per year. Although it no longer operates the Portsmouth Plant, USEC is developing a new enrichment technology that it plans to construct at the Portsmouth site.

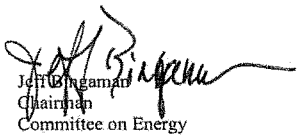
USEC has recently approached the Congress with proposals that DOE transfer to the corporation substantial quantities of depleted uranium inventories that, when enriched, would have an estimated market value of 1-2 billion dollars. USEC has requested the transfer of these uranium inventories to offset substantially higher operating costs at the Paducah Plant due to soaring electricity costs and to fund the construction of a new enrichment plant in Ohio. A viable domestic enrichment capacity is important for our energy security interests and provides fuel for a growing nuclear industry.

We request that the Government Accountability Office (GAO): review existing authorities and agreements between USEC and DOE that are related to USEC's request to transfer DOE's uranium or depleted uranium inventories; advise us whether DOE has the legal authority to transfer the requested quantities of depleted uranium inventories to USEC; and, if so, what impact the transfer may have on other DOE programs. We would like an answer to these questions by June 15, 2007.

We also ask that GAO review what options the government may have in response to an untimely decision by USEC to stop uranium enrichment operations at the Paducah Plant, or in the event USEC is unable to commercialize the centrifuge technology it has under development. In addition, we would request that GAO outline options to ensure that the government's interests are fully protected in connection with USEC's proposals to transfer depleted uranium. The GAO should be prepared to brief us on its preliminary findings by no later than August 1, 2007 with the completion of the full review to be determined at a later date.

If you have any questions regarding this proposal, please contact us, or Scott O'Malia (Senate Committee on Appropriations) at 202-224-2039, Jonathan Epstein at 202-224- 3357 (Senate Committee on Energy and Natural Resources), Richard Miller (Energy and Commerce Majority) at 202-226-2424 or Dwight Cates (Energy and Commerce Minority) at 202-225-3641.

John D. Dingell
Chair
Committee on Energy and Commerce
and Natural Resources



Jeff Bingaman
Chairman
Committee on Energy

Joe Barton
Ranking Member
Committee on Energy and Commerce
and Natural Resources

Pete V. Domenici
Ranking Member
Committee on Energy

Bart Stupak
Chair
Subcommittee on Oversight and Investigations

Department of Energy
Washington, DC 20585

December 21, 2007

Ms. Susan D. Sawtelle
Managing Associate General Counsel
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Ms. Sawtelle:

We have your letter of December 10, 2007 in which you requested advice concerning the Department's understanding of the effects of various statutes it administers regarding hypothetical transactions involving depleted uranium owned by the Department. Your letter requested a written response to 14 questions by December 31, 2007.

I regret that we are not in a position to accommodate this request. As a general matter, we believe it unwise to purport to render formal determinations about the reach of various statutory authorities for which the Department is responsible in an abstract factual setting. That is because such abstract or generalized factual predicates inherently are factually incomplete and fail to present the entirety of a contemplated transaction as would be the case were the Department proceeding with an actual proposed course of action. Any legal conclusions prompted by such hypothetical facts would risk being erroneous in the ultimate event because of the inherent incompleteness of the factual premises that would underlie such conclusions.

This prudential consideration is rendered more acute by the fact that none of the statutes about which your letter requests a written analysis involves any function vested by law in the Government Accountability Office (GAO). It is elemental that formally-rendered legal advice is to be afforded for the purpose of guiding officials in carrying out statutes they administer and that govern their activities. GAO, however, is a stranger to these legal questions because it has no legal responsibility for their administration that would require legal guidance by the Department.

In this connection, I note that a consistent element of the questions your letter has submitted is that they request the Department's "views" of these legal questions. The Department does not formulate formal "views" on legal questions regarding the statutes it administers; instead it makes determinations about such questions because that is a necessary incident of executing the law. This observation complements the prudential considerations described above.

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Your letter did ask two questions regarding actions actually previously taken regarding the transaction involving the Bonneville Power Administration. Our conclusion regarding the inapplicability of the particular constraints of section 3112 of the USEC Privatization Act was based on consulting the text and legislative history of the statute, together with the text of the Atomic Energy Act, which revealed that this particular transaction did not fall within section 3112's constraints. The availability of section 161m of the Atomic Energy Act in this transaction was based on its text and the Department's longstanding understanding, again textually-based, that depleted uranium constitutes "source material" under that statute.

As your letter notes, there was conducted on November 8, 2007 a meeting with GAO representatives and senior attorneys from this office that addressed, conversationally, most of the questions your December 10 letter has propounded. In that meeting DOE attorneys provided the advice they were in a position to render to aid in your inquiry, including identification of those questions as to which the Department had not had occasion to formulate a conclusion. I have every confidence that the insights provided the GAO by this courtesy will enable it appropriately to meet any commitment it may have made to any congressional staff for GAO's views regarding these subjects.

Please accept this office's best wishes to you and to all your colleagues for this Holiday season.

Sincerely,

Eric J. Fygi
Deputy General Counsel

HENRY A. WAXMAN, CALIFORNIA
EDWARD J. MARKEY, MASSACHUSETTS
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DENNIS B. FITZGIBBONS, CHIEF OF STAFF
GREGG A. ROTHSCHILD, CHIEF COUNSEL

ONE HUNDRED TENTH CONGRESS

U.S. House of Representatives
Committee on Energy and Commerce
Washington, DC 20515–6115

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February 14, 2008

C.H. "Bud" Albright, Jr.
Under Secretary
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Under Secretary Albright:

We understand that the Department of Energy (DOE) is assessing various approaches to the disposition of DOE's high-assay depleted uranium tails (tails). Given the nearly 10-fold increase in uranium prices, a portion of the 560,000 metric tons of depleted uranium inventory can be economically re-enriched and sold for at least $2 billion. How DOE decides to manage this asset will determine whether the benefits flow to American taxpayers or private interests.

The Committee on Energy and Commerce and its Subcommittee on Oversight and Investigations asked the Government Accountability Office (GAO) to evaluate various models to re-enrich the economically valuable tails and return the proceeds to the U.S. Treasury.

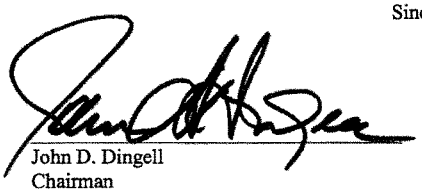
One legislative proposal calls for DOE to enter into a contract with United States Enrichment Corporation on a sole source basis to re-enrich these tails, but this arrangement presents numerous business risks; moreover, sole source contracting will diminish the Government's bargaining power to maximize returns on behalf of taxpayers.

One alternative to a sole source contracting arrangement is to sell the tails outright in an auction to qualified buyers. This could be a very simple transaction. Using a competitive auction, the buyers would pay DOE cash for the tails, enrich the tails at their own cost, and return the remaining low-assay tails to DOE for disposition. We believe market-based business models should be explored and market interest tested as an option to assess the best outcome for taxpayers.

To test whether there might be market interest, we recommend that the Department issue a request for expressions of interest (RFI). The RFI should test market interest on matters such as duration of sales contracts, preferred lot size, overall quantity that might be acquired relative to constraints on available uranium enrichment capacity, and legal and policy issues that need to be considered. To calibrate market interest, DOE will need to inform the public on the specific quantities of available tails for each assay.

We welcome your response to our recommendation and look forward to working with you. For further information, please contact John Sopko, Chief Counsel for Oversight, or Richard Miller, Investigator, with the Committee on Energy and Commerce staff at (202) 226-2424.

Sincerely,



John D. Dingell
Chairman

Bart Stupak
Chairman
Subcommittee on Oversight and Investigations

cc: The Honorable Joe Barton, Ranking Member
Committee on Energy and Commerce

The Honorable John Shimkus, Ranking Member
Subcommittee on Oversight and Investigations

The Honorable Samuel W. Bodman, Secretary
United States Department of Energy

The Under Secretary of Energy
Washington, DC 20585

March 12, 2008

The Honorable John D. Dingell
Chairman, Committee on Energy
and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

Thank you for your letter of February 14, 2008, concerning the disposition of the Department of Energy's high-assay depleted uranium tails. Your letter comes at a key time in the Department's decision-making process. The Department will release a Secretarial Policy Statement later today that sets forth the principles that will provide the framework for the future use and disposition of the Department's excess uranium inventories.

In general, the Secretarial Policy Statement commits the Department to manage its excess uranium inventories in a manner that:

(1) is consistent with all applicable legal requirements;
(2) maintains sufficient uranium inventories at all times to meet the current and reasonably foreseeable needs of Departmental missions;
(3) undertakes transactions involving non-U.S. Government entities in a transparent and competitive manner, unless the Secretary of Energy determines that overriding Departmental mission needs dictate otherwise and
(4) is consistent with and supportive of the maintenance of a strong domestic nuclear industry.

The Secretarial Policy Statement also confirms the Department's preliminary view on potential market impacts set forth in its 2006 draft Uranium Sales Strategy. That is, as a general matter, the introduction of uranium into the domestic market from the Department's excess uranium inventories in amounts not to exceed 10 percent of the total annual fuel requirements of all licensed nuclear power plants should not have an adverse material impact on the domestic uranium industry. Consistent with applicable law, the Department will conduct analyses of the impacts of particular sales or transfers on the market and the domestic uranium industry prior to entering into particular sales or transfers.

With respect to the depleted uranium in the Department's excess uranium inventories, the Secretarial Policy Statement agrees with your conclusion that the

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significant increases in market prices for uranium over recent years have made some of this depleted uranium, especially that with higher assay levels, a valuable commodity. As a result, the Department will conduct appropriate cost-benefit analyses to determine what circumstances would justify enriching and/or selling this depleted uranium. The Department's policy will be to seek the best economic value for the Department and the taxpayer, in light of identified objectives and needs. The Department will proceed with this effort in the near future.

We appreciate your interest in the management of the Department's excess uranium inventories, and, in particular, its high-assay depleted uranium tails. We would be pleased to brief you or your staff on the Secretarial Policy Statement and, as they develop, the Department's future plans for specific actions with respect to its excess uranium inventories.

If you have any further questions, please contact me or Lisa E. Epifani, Assistant Secretary for Congressional and Intergovernmental Affairs, on 202-586-5450.

Sincerely,

C. H. Albright Jr.

United States Department of Energy
Office of Public Affairs
Washington, DC 20585

NEWS MEDIA CONTACT:
Angela Hill, (202) 586-4940

FOR IMMEDIATE RELEASE
Wednesday, March 12, 2008

DOE Announces Policy for Managing Excess Uranium Inventory

WASHINGTON, DC – U.S. Secretary of Energy Samuel W. Bodman today released a Policy Statement on the management of the Department of Energy's (DOE) excess uranium inventory, providing the framework within which DOE will make decisions concerning future use and disposition of its inventory. During the coming year, DOE will continue its ongoing program for downblending excess highly enriched uranium (HEU) into low enriched uranium (LEU), evaluate the benefits of enriching a portion of its excess natural uranium into LEU, and complete an analysis on enriching and/or selling some of its depleted uranium. Specific transactions are expected to occur in the near future. Consistent with applicable law, DOE will review the impacts of particular sales and transfers from its excess uranium inventory on the market and the domestic uranium industry, before undertaking these sales and transfers.

"Substantial increases in market prices for uranium in recent years have made the Department's excess uranium inventory a valuable commodity," Secretary Bodman said. "We will manage this commodity in a prudent manner that recognizes a variety of factors including our national security interest, departmental missions, realities of the global marketplace, and impacts on domestic industry, while assuring that transactions involving this inventory yield the best economic value for DOE and the American taxpayers."

The Policy Statement commits DOE to manage its excess uranium inventories in a manner that: (1) is consistent with all applicable legal requirements; (2) maintains sufficient uranium inventories at all times to meet the current and reasonably foreseeable needs of Departmental missions; (3) undertakes transactions involving non-U.S. Government entities in a transparent and competitive manner, unless the Secretary of Energy determines in writing that overriding Departmental mission needs dictate otherwise; and (4) is consistent with and supportive of the maintenance of a strong domestic nuclear industry.

The Policy Statement also confirms the position set forth in the draft uranium sales strategy posted by DOE in Fiscal Year 2007. That is, as a general matter, the introduction into the domestic market of uranium from Departmental inventories in amounts that do not exceed ten percent of domestic demand in any one year period should not have an adverse material impact on the domestic uranium industry.

The Department has a significant inventory of depleted, natural and enriched uranium that is excess to U.S. defense needs and located at various DOE sites across the nation. This uranium is equivalent to approximately 59,000 metric tons of natural uranium. DOE's uranium inventory is expensive to maintain and secure, and is in various forms, many of which are not readily usable. This uranium inventory was acquired over the years from defense programs, uranium enrichment, and other activities. Under the Atomic Energy Act of 1954, DOE has broad authority to loan, sell, transfer or otherwise utilize the uranium in its inventory.

To read the Secretarial Policy Statement, as well as other related DOE materials, visit: www.ne.doe.gov

-DOE-

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The Secretary of Energy
Washington, DC 20585

Secretary of Energy's Policy Statement on Management of the Department of Energy's Excess Uranium Inventory

INTRODUCTION

The Department of Energy has a significant inventory of uranium that is excess to United States defense needs. This inventory is expensive to manage and to secure, and consists of uranium in various forms, most of which are not readily usable. However, in light of the significant increases in market prices for uranium in recent years, the uranium in this inventory is a valuable commodity both in terms of monetary value and the role it could play in achieving vital Departmental missions and maintaining a healthy domestic nuclear infrastructure. This Policy sets forth the general framework within which the Department prudently will manage its excess uranium inventory.

MANAGEMENT PRINCIPLES

Legal. The Department has broad authority under the Atomic Energy Act of 1954 (AEA) to loan, sell, transfer or otherwise utilize its inventories of depleted, natural and enriched uranium. In exercising this authority, the Department must act consistently with other relevant statutory provisions, such as section 3112 of the USEC Privatization Act which imposes limitations on certain specified transactions.

In the absence of otherwise applicable statutory authority, the Department may not retain any money it receives from the sale of uranium and use that money for Departmental programs. Instead, money received normally will be deposited into the miscellaneous receipts account in the United States Treasury. However, the Department does have authority under the AEA to engage in barter transactions, where it transfers uranium and receives services or another form of uranium as compensation. Under this statutory authority, the Department has structured several arrangements so that some uranium can be used to offset the costs of certain services that have been provided to the Department such as downblending, enrichment, decontamination or storage. The Department will consider using this approach in the future where it determines such an approach is reasonable, furthers the interests of the Department and results in the receipt of reasonable value for the material exchanged for services.

Before making any final decision on a particular action, the Department must comply with applicable requirements of the National Environmental Policy Act of 1969 (NEPA). This may include the preparation of an environmental assessment, an environmental impact statement, or other analyses, as appropriate.

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Department of Energy Needs. The Department should maintain sufficient uranium inventories at all times to meet the current and reasonably foreseeable needs of Departmental missions. The National Nuclear Security Administration, the Office of Nuclear Energy, the Office of Environmental Management and other relevant Departmental offices will work together to ensure these needs are identified, the needed amounts and forms of uranium quantified, and the Department's uranium inventory appropriately maintained. The Department will only sell or transfer uranium that is excess to those needs.

Transparency and Competitive Procedures. Transactions involving non-U.S. Government entities will be undertaken in a transparent and competitive manner, unless the Secretary of Energy determines in writing that overriding Departmental mission needs dictate otherwise. All transactions involving excess uranium transfers or sales to non-U.S. Government entities must result in the Department's receipt of reasonable value for any uranium sold or transferred to such entities. Reasonable value takes into account market value, as well as other factors such as the relationship of a particular transaction to overall Departmental objectives and the extent to which costs to the Department have been or will be incurred or avoided.

Energy Security. To the extent practicable, the Department will manage its uranium inventories in a manner that is consistent with and supportive of the maintenance of a strong domestic nuclear industry. Consistent with this principle, the Department believes that, as a general matter, the introduction into the domestic market of uranium from Departmental inventories in amounts that do not exceed ten percent of the total annual fuel requirements of all licensed nuclear power plants should not have an adverse material impact on the domestic uranium industry. The Department anticipates that it may introduce into the domestic market, in any given year, less than that amount, or, in some years for certain special purposes such as the provision of initial core loads for new reactors, more than that amount. Consistent with applicable law, the Department will conduct analyses of the impacts of particular sales or transfers on the market and the domestic uranium industry, prior to entering into particular sales or transfers.

The Department also has determined that, in some cases, it may be feasible to manage its uranium inventories by entering into arrangements with existing and potential operators of nuclear fuel cycle facilities in a manner that supports the maintenance and expansion of domestic nuclear fuel cycle infrastructure. The Department believes that it is in the energy security interests of the United States to maintain and expand this infrastructure. Any such arrangement, however, must contain reasonable terms and conditions, be competitive to the extent practicable, and be otherwise consistent with this Policy. Further, and if the Department determines appropriate on a case by case basis, the Department would consider using its uranium inventory to address prolonged severe

disruptions in the supply of uranium that cannot be addressed practically through the marketplace and that threaten to cause the shutdown of commercial nuclear reactors in the United States.

CONVERSION OF URANIUM INVENTORY INTO LEU

The Department uranium inventory contains uranium in various forms. These forms include highly enriched uranium (HEU), low enriched uranium (LEU), natural uranium and depleted uranium. For many purposes, uranium is not readily usable unless it has been converted into LEU. In addition, the conversion of HEU, natural uranium and depleted uranium into LEU would, in many cases, reduce inventory levels, minimize inventory management, surveillance and maintenance costs, provide the Department with increased flexibility for meeting potential future programmatic needs, enhance the value of the converted uranium, and, if sales occur and the Department was able to retain the proceeds from those sales, result in the need for fewer appropriated dollars to meet the Department's mission needs. Furthermore, the conversion of HEU into LEU promotes nuclear non-proliferation objectives by reducing the amount of HEU available.

Accordingly, the Department is considering conversion into LEU of a portion of its uranium inventory, and retaining that LEU in the Department's uranium inventory. The Department will base any decisions to engage in such transactions on cost-benefit analyses and other relevant factors.

For non-proliferation reasons, the Department already has an active program for downblending much of its excess HEU into LEU, and has issued a Record of Decision under NEPA concerning that activity and the use of the LEU in commercial reactors. Over the coming years, the Department expects to downblend most of its excess HEU into LEU. The Department will continue the downblending of HEU to promote non-proliferation objectives and to assure a supply of LEU to meet various Departmental programmatic needs.

The Department's current excess uranium inventory also contains a considerable amount of natural uranium, primarily in the form of uranium hexafluoride. Much of this uranium meets commercial-grade specifications but cannot be sold until after March 2009 because of a prior agreement between the United States and Russia. While this natural uranium already has value in its current form, conversion into LEU would minimize management costs to the Department while enhancing the usability and value of the uranium. Accordingly, the Department is evaluating the desirability of enriching a portion of this natural uranium into LEU, taking into account costs, market conditions, programmatic priorities and potential uses. As part of this evaluation, the Department will initiate work on cost-benefit and environmental analyses that will support a decision on how to proceed.

Most of the remaining excess uranium in the Department's inventory consists of depleted uranium. Making this depleted uranium useable would require considerable processing, depending on the uranium's form, assay level, and degree of contamination. In light of the significant increases in market prices for uranium over the past three years, however, some of this depleted uranium, especially that with higher assay levels, has become a potentially valuable commodity. The Department will identify categories of depleted uranium that have the greatest potential market value and/or use to the Department, on the basis of assay level, degree of contamination and other relevant factors. The Department then will conduct appropriate cost-benefit analyses to determine what circumstances would justify enriching and/or selling potentially valuable depleted uranium rather than pursuing current plans to store, process and ultimately dispose of it. The Department will seek to obtain the best economic value for the Department, in light of the Department's identified objectives and needs, and will proceed with this effort in the near future.

Samuel W. Bodman
Secretary of Energy

March 11, 2008
Date

TO: Ben McRae
Assistant General Counsel for Civilian Nuclear Programs
FROM: Marvin L. Shaw
Attorney-Advisor
DATE: March 16, 2005

SUBJECT: Legal Review of Uranium Tails Pilot Project involving Bonneville Power Administration (BPA), the Department of Energy (DOE) Office of Environmental Management (EM) and Energy Northwest (EN)

FACTS: Energy Northwest (EN) approached the Bonneville Power Administration (BPA) about engaging the Department of Energy (DOE) in recycling DOE uranium tails for use in the Columbia Generating Station's (CGS) nuclear fuel cycle. These tails are depleted uranium hexafluoride (UF6) that was generated at the Portsmouth and Paducah Gaseous Diffusion Plant (GDP) sites. DOE's Office of Environmental Management (EM) has expressed favorable interest in establishing a Pilot Program, which would reduce its obligations for conversion and disposal of the tails.

ISSUE: The Secretary's office informally requested the Office of General Counsel (OGC) to determine DOE has the statutory authority to support the proposed Pilot Project in which DOE would transfer depleted uranium hexafluoride tails to Energy Northwest/Bonneville Power Administration.

BRIEF ANSWER: The statutory provisions addressing Departmental authority do not specifically address the transfer of depleted uranium hexafluoride tails. Section 3112 of the USEC Privatization Act, the provision most directly related to the sale or transfer of uranium, does not directly address the transfer of such depleted uranium. Nevertheless, a reasonable argument can be made that the Department has the authority to facilitate such transfers of depleted uranium under the general authority of Atomic Energy Act, particularly sections 161m and 82.

DISCUSSION: The transfer of uranium is addressed in the USEC Privatization Act. Specifically, section 3112(a) states that "the Secretary shall not provide enrichment services or transfer or sell any uranium (including natural uranium concentrates, natural uranium hexafluoride, or enriched uranium in any form) to any person except as consistent with this section."

As a threshold question, internal DOE discussion has raised concerns about whether depleted uranium hexafluoride of the type contemplated in the DOE/BPA/EN transfer is covered by this section. Subsection (a) lists several examples of uranium to be covered by this section including natural uranium concentrates, natural uranium hexafluoride, any enriched uranium in any form. Section 3112(a) does not list depleted uranium hexafluoride as an example. Nevertheless, it is relatively clear that this provision is applicable to depleted uranium given that it states "any uranium." The examples of types of uranium are merely a listing and should not be interpreted as a limitation to the broader phrase "any uranium."

Department of Energy

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

see p. 1

EXECUTIVE OFFICE

MAY 10 2005

MEMORANDUM FOR THE DEPUTY SECRETARY

THROUGH: DAVID K. GARMAN
ASSISTANT SECRETARY, ENERGY EFFICIENCY AND RENEWABLE ENERGY

FROM: STEPHEN J. WRIGHT
ADMINISTRATOR AND CHIEF EXECUTIVE OFFICER, BONNEVILLE POWER ADMINISTRATION

Charles E. Anderson
PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR ENVIRONMENTAL MANAGEMENT

SUBJECT: ACTION: Approve Uranium Tails Pilot Project involving Bonneville Power Administration, the Department of Energy Office of Environmental Management and Energy Northwest

ISSUE: The Bonneville Power Administration (BPA), in coordination with Energy Northwest (EN), has entered into discussions with the Office of Environmental Management (EM) regarding the potential for recycling two specific lots of uranium tails.

DISCUSSION: EN is a joint operating agency organized under Washington State law. Approximately eighteen months ago, EN approached BPA expressing an interest in engaging the Department of Energy (DOE) about recycling some of the DOE uranium tails for use in the Columbia Generating Station's (CGS) nuclear fuel cycle. BPA has acquired all of the generating capacity of CGS. These tails are depleted uranium hexafluoride (DUF_6) that were generated by DOE at the Portsmouth and Paducah Gaseous Diffusion Plant (GDP) sites. Over 700,000 metric tons (MT) of DUF_6 were generated during the fifty years that the government controlled the uranium enrichment enterprise, and the DUF_6 is currently in the custody of EM.

Subsequent discussions between EN and EM have identified the following areas of common interest:

- EM has an interest in re-using the tails in a Uranium Tails Pilot Project (Pilot Project), which, if successful, will reduce EM's obligations for conversion and disposal of tails and improve its planning ability by confirming such reuse is practical.

- EN has an interest in commercial enrichment of the tails for use in the CGS fuel cycle, provided that enrichment can be done in an economically viable manner to benefit CGS and BPA's ratepayers.

Consequently, a small-scale Pilot Project to assess the feasibility and benefits of commercial use of the DOE tails is proposed by BPA and EM. Enrichment of about 8,500 MT of DUF_6 produces enough equivalent natural UF_6 for about four fuel reloads (eight years) for CGS. This is estimated to provide a reduction in CGS future fuel costs of $50 million, based on current uranium prices, which otherwise would be recovered in BPA rates.

The Secretary has the statutory authority under section 161m of the Atomic Energy Act to approve the transfer of the depleted uranium. Section 3112 of the USEC Privatization Act, which restricts the sale or transfer of certain DOE natural and enriched uranium stockpiles, does not apply to the transfer of the depleted uranium (tails).

On April 1, 2005, BPA executed a categorical exclusion for this proposal which exempts it from further National Environmental Policy Act review based upon two regulatory provisions: 10 C.F.R. Part 1021, Subpart D, Appendix B3.6, which exempts, among other things, "small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions" and 10 C.F.R. Subpart D, Appendix A7, which exempts the "[t]ransfer, lease, disposition or acquisition of interests in personal property (e.g., equipment and materials) or real property (e.g., permanent structures and land), if the property use remains unchanged; i.e., the type and magnitude of impacts would remain essentially the same."

This Pilot Project is planned to commence when USEC begins with the enrichment of the first delivery of DUF_6 to USEC and is expected to end within two years of that date. Any decision by DOE to continue enrichment beyond the duration of the Pilot Project will be based upon appropriate NEPA review.

DOE's inventory of depleted uranium is surplus to defense needs and below commercial specification in the content of the isotope U^{235}. The domestic and international uranium industry is experiencing a resurgence that has witnessed the price of natural uranium more than double since 2003. The Office of Nuclear Energy, Science and Technology (NE) commissioned a market study to examine the impact upon the commercial uranium industry of the Pilot Project and other planned sales/transfers of the Department's uranium inventory, including down-blended Highly Enriched Uranium belonging to the National Nuclear Security Administration (NNSA). Based on this market study, NE prepared an analysis (attached) of the proposed depleted uranium transfer to BPA. NE has concluded that the Pilot Project combined with other known Department plans for placing uranium inventories into the commercial market will have insignificant impact on the domestic uranium mining, conversion, or enrichment industries. In fact, the inclusion of this material in the market is expected to increase the demand for enrichment services and should be beneficial to the enrichment industry.

Unless an innovative approach such as the one proposed herein is adopted, the fair market value of DOE's DUF_6 inventory is negative because DOE would otherwise pay for its disposition. The material is being transferred based on the negotiated value that represents a fair trade-off by each party of the expected cost savings/avoidance and risk, considering the fair market value. In addition, the Pilot Project would advance one of DOE's top priorities of "pursuing nuclear power and the resolution of nuclear waste disposal ... and environmental cleanup issues."

The Pilot Project will be memorialized through a Letter of Agreement (05GS-75180) signed on DOE's behalf by the Manager, Portsmouth Paducah Project Office (PPPO).

PPPO is the appropriate DOE office because it has been tasked with dispositioning DOE's entire tails inventory, and other uranium inventories stored at the DOE sites in Portsmouth and Paducah. Custodial and administrative responsibility for the DUF_6 shall pass, and delivery shall be deemed made from EM to BPA upon acceptance of the material for processing by the United States Enrichment Corporation (USEC) at the USEC Paducah Enrichment Plant. Title to the tails will pass to EN upon commencement of tails processing by USEC. EN will pay EM or its agent a nominal fee for the handling of the cylinders and a subsequent fee for any uranium that is successfully processed by USEC. Due to the Miscellaneous Receipts Act, DOE is precluded from retaining such fees, although DOE may retain fees in an amount equal to the direct costs and reasonably related indirect costs incurred by DOE to transfer the cylinders to EN. In spite of the limitation imposed by the Miscellaneous Receipts Act, the transaction will result in the disposition of DUF_6 with a net reduction in EM funding requirements estimated to be as much as approximately $40 million.

EN will enter into contractual agreements with USEC for the enrichment of the tails from 0.4 percent to 0.7 percent uranium 235 (U^{235}). Estimates for USEC's enrichment services and fees to EN are in the range of $88 million for the Pilot Project. EN will use a line of credit and bond financing to support the cash flows required for the Pilot Project.

In support of the Pilot Project the following actions are being completed:

- BPA has proposed an agreement (attached) with EM for the transfer of the uranium tails.

- EN is finalizing an enrichment contract with USEC for processing of the tails material. In the past, DOE and USEC have expended considerable time and resources to resolve disputes over contaminated cylinders. Agreement between EN and USEC should be clear that DOE will incur no cost obligation if USEC rejects a cylinder.

Following completion of the above actions, the transfer and enrichment of the uranium tails will begin. This Pilot Project is an opportunity to determine the feasibility of enriching depleted uranium and for all parties involved to gain financial benefits while accomplishing a reduction in the nation's depleted uranium tails inventory.

SENSITIVITIES: The reduction of DOE tails inventory may be viewed with concern by both the Kentucky and Ohio Congressional delegations because it reduces the inventory of feed for the DOE conversion facilities under construction in Portsmouth and Paducah. The reduction of inventory would reduce the operational life at these plants and thereby impact employment. Members of the Ohio and Kentucky delegations are likely to believe that if the Pilot Project is successful, DOE will expand it, thus further reducing inventory of feed for the new DOE conversion plants. This will be offset by the increased demand for enrichment services at Paducah and may be further neutralized by the fact that the resultant secondary tails will likely be processed at a DOE facility. Members of the New Mexico Congressional delegation may also view this proposed Pilot Project with great skepticism. Louisiana Energy Services (LES) is working to build a uranium enrichment facility in New Mexico with strong support from the community. The Congressional delegation may view the Pilot Project as benefiting USEC in the future at the expense of potential competition from LES.

Members of the Oregon, Washington, Idaho, and Montana delegations are likely to be highly appreciative of the $50 million benefit to ratepayers through BPA rates.

The uranium mining, conversion and enrichment industry is very concerned with the impact of DOE uranium inventories competing in the commercial uranium market. Although this Pilot Project will increase demand for enrichment at the Paducah GDP, there will be a slight reduction in demand for natural uranium. The House version of the Energy Bill as currently drafted, H.R. 6, would annually limit the "[t]otal amount of uranium transferred [by DOE] ... for consumption by commercial nuclear power end users." The amount of material

covered by the Pilot Project alone would be within the limit allowed for under H.R. 6.

If it becomes law, H.R. 6 would limit federal transfers of uranium to three million pounds of U3O8 equivalent per year for the period FY 2005-09. Other planned sales or transfers in combination with the Pilot Project could exceed the annual limit for uranium transfers set forth in H.R. 6. Specifically, a proposed sale of low-enriched uranium derived from 17 MT of highly-enriched uranium (HEU) by NNSA: 0 M lbs in 2005; 2.3 M lbs in 2006; 3.0 M lbs in 2007 and 2.3 M lbs in 2008. BPA will work with EM, EN and USEC to accelerate planned 2005 transfers under the Pilot Project toward the 3.0 M lbs limit, and to have part of the DUF_6 Pilot Project deferred starting in FY 2006, if necessary. BPA will consult and coordinate on a continuing basis with NNSA to adjust BPA transfers during the two year term of the Pilot Project so as not to conflict with actual NNSA transfers should a uranium transfer limit, such as the one set forth in H.R. 6, be enacted. However, members of the Senate and House Armed Service Committees are likely to express concerns that the Pilot Project will negatively affect the ability of NNSA to transfer uranium if the H.R. 6 limit on uranium transfers is signed into law.

If approved, DOE should enter into discussions with the uranium mining industry to assure them that DOE will remain sensitive to the price of uranium and ensure that DOE's huge tails inventory will be managed to avoid any impact to market prices. Unfortunately, the price may continue to rise or drop independent of any DOE action, but the industry may blame DOE for any price drop. Members of the Nebraska and Wyoming Congressional delegations (where uranium mining still occurs) are likely to strongly oppose the Pilot Project.

If the Pilot Project is successful, the Tennessee Valley Authority may propose a similar arrangement to transfer DUF6 to support their needs connected to tritium production and the requirement for U.S. origin uranium (foreign source uranium is generally restricted by agreement to non-defense purposes).

POLICY IMPACT: None

RECOMMENDATION: Approve the Pilot Project Agreement (Attachment 1) based on the market analysis (Attachment 2) that has concluded there is insignificant impact to the domestic nuclear fuel supply industry.

Approval: _____

CONCURRENCE:	Chief Financial Officer/ME-1	S/	5/16/05
	Nuclear Energy/NE-1	S/	5/16/05
	General Counsel/GC-1	S/	5/16/05
	National Nuclear Security/NA-1	S/	5/16/05
	Congressional Affairs/CI-1	S/	5/16/05

2 Attachments

cc: I. Kolb - S-1
L. Brown - S-3
K. Kolevar - TD-1
E. Nicoll - CI-20
W. Murphie - PPPO
S. Wright - BPA

Hill, David R.

From: Spurgeon, Dennis
Sent: Thursday, November 16, 2006 5:32 AM
To: Hill, David R.
Subject: Re: USEC

I certainly agree that step #1 is for EM to confirm that the ES decommissioning proposal is in DOE's best interest and that EM would like to proceed. Assuming that is true, then we need to be sure as a next step that the legal challenge is not insurmountable. If it is not, then we have a basis to obtain the necessary approvals to move forward to try and craft a deal.

We are about to have a USEC train wreck that could have serious side effects for nuclear energy in the U.S. Like it or not, DOE is involved. Whether or not we can prevent the train wreck is questionable, but I believe we must try our best.

Sent from my BlackBerry Wireless Device

----- Original Message -----
From: Hill, David R.
To: Spurgeon, Dennis
Sent: Wed Nov 15 18:09:18 2006
Subject: RE: USEC

Figuring out the answers to all of these questions, and addressing them as appropriate with ES and/or USEC, will require a large commitment of time and resources from GC; I assume from EM, NE and maybe others as well. Before I task people to do the extensive legal analysis and negotiation that will be necessary -- particularly since I think some of the legal challenges are daunting and may even be insurmountable -- I want to know that the Department is interested in taking on all of the non-legal challenges that the proposal presents. In order to get that, I think we need a more concrete proposal from ES/USEC, we need to have a further read from Jim Rispoli, and we need to have a discussion with David G. and maybe with S-2 and S-1. drh

-----Original Message-----
From: Spurgeon, Dennis
Sent: Wednesday, November 15, 2006 4:35 PM
To: Hill, David R.
Subject: Re: USEC

Understand the challenges. Do we have solutions and a path forward??

Sent from my BlackBerry Wireless Device

----- Original Message -----
From: Hill, David R.
To: Spurgeon, Dennis; Rispoli, James
Sent: Wed Nov 15 14:45:34 2006
Subject: USEC

T (along with Eric Fygi and Mary Egger) have given some thought to the USEC-ES proposal iscussed with us a couple of weeks ago. The proposal would present a number of thorny egal issues for DOE; attached is a brief rundown of some of them. We can discuss again at your convenience. drh

DUF_6 Pilot Project

An Intradepartmental Transfer of
Depleted Uranium

Project Completion Report

Source: Bill Murphie, DOE/PPPO, 10/2/08, who said Bonneville Power Administration (BPA) prepared the slides.
See GAOHQ# 2139726 for write-up of Murphie meeting

Background

- Columbia Generating Station is an 1,107 MW boiling water reactor owned and operated by Energy Northwest. The Plant is located on the DOE Hanford Site.

- BPA purchases 100% of Columbia Generating Station's power and pays all operating costs per the Project agreements.

- BPA is self financed, funded by the ratepayers and does not receive taxpayer funded appropriations.

- There are 700,000 tons of depleted uranium tails (DUF_6) at Portsmouth and Paducah that have accumulated from 50 years of enrichment operations with varying assays of residual U^{235} isotope.

- The price of uranium (UF_6) rose from $33/KgU to $74/KgU over the two-year period of April 2003 – April 2005. By the fall of 2005 it was believed to be economically viable to extract additional U^{235} from some of the higher assay DUF_6.

- Natural uranium contains ~ 0.7% of the U^{235} isotope, the DUF_6 used for the pilot project contained a minimum assay 0.4% U^{235}.

DUF_6 Pilot Project

- A pilot project for recycling 8,500 metric tons of DOE DUF_6 for end use as fuel in a commercial reactor was proposed to DOE Environmental Management (DOE-EM).

- This pilot project provided a unique opportunity for DOE-EM, Bonneville Power Administration (BPA), and taxpayers/BPA ratepayers to benefit from a commodity that in 2005 had no identified reuse.

- The scope of the pilot was limited so as to not impact the domestic uranium mining market and not significantly affect the conversion plants under construction in Kentucky and Ohio.

DUF_6 Pilot Project (cont.):

- The Pilot was designed to assess the feasibility and benefits of commercial use of DOE's DUF_6, and produce enough equivalent natural uranium for about 8 reactor years of fuel for the Columbia Generating Station.

- The Pilot was to provide DOE with information to support a decision regarding any subsequent action related to reuse of the remaining DUF_6 inventory.
  - Pilot was to use only 1.2 % of the total DOE DUF_6 inventory.

DUF_6 Pilot Project (cont.):

- The Pilot transferred uranium from DOE-EM to Energy Northwest on behalf of BPA. Energy Northwest will use the uranium produced by this Pilot Project to generate electricity solely on behalf of BPA.

- No additional funding was required for DOE.
  - DOE-EM's costs to transfer the material are covered by Energy Northwest /BPA

- Estimated savings to U.S. taxpayers of up to $40 million were estimated, through cost avoidance for DOE in the DUF_6 disposal program.

- Savings to electric ratepayers in Idaho, Oregon, Washington, and Montana were originally estimated at $20-$50 million, by reducing the costs of fuel for the Columbia Generating Station nuclear plant over four fuel cycles/reloads (8 years), and stabilization of fuel costs for that plant.

Pilot Project Implementation

- The DUF_6 Pilot Project became known as the Uranium Tails Pilot Project (UTPP or Project). A unique project developed jointly by the Department of Energy Environmental Management Division (DOE-EM), Energy Northwest (EN) and the Bonneville Power Administration (BPA).

Pilot Project Implementation (cont.):

- Approval
  - UTPP received approval from the Deputy Secretary Clay Sell in May of 2005.

- Processing
  - The first cylinder of the 672 cylinders containing DUF_6 was fed into USEC's process line at the Paducah Gaseous Diffusion plant in June of 2005.
  - The final cylinder of DUF_6 was processed in November 2006.

UTPP Targets:

- The UTPP's production target was set at 1,820,000 – 1,957,000 KgU, enough feed stock for 8 years of operation of Columbia Generating Station. Energy Northwest ultimately received 1,939,817 KgU of natural UF_6 credited to their account at United States Enrichment Corporation (USEC) at the completion of the UTPP.

- The initial UTPP target budget estimate was set at $85-$88 million but included an escalator for an anticipated power rate increase by the Tennessee Valley Authority (TVA) to the company providing enrichment services (USEC) in the spring of 2006. The cost of this TVA power rate increase was estimated to be in the range of $5 -$15 million before the commencement of the project, the actual increase was approximately $6.6 million for a revised budget estimate of $94.6 million.

UTTP Targets (cont.):

- The Total UTPP costs are currently estimated at $94.6 million (waiting final invoicing). A break down of individual costs were as follows:

  - $1.48 million will be paid to DOE-EM for incurred transportation and handling costs.

  Where the payment for the tails? see p.12

  - $7.02 million will be paid to the U.S Treasurary for the DUF_6 that was processed.

  - $86.1 million was paid to USEC for the 509,269 SWU used to process the DUF_6 into natural UF_6. $169.07 per SWU

UTTP Targets (cont.):

- Initially in the late summer of 2004 the UTTP was estimated to provide a $20 million reduction in future fuel costs for CGS. By May 2005 when the Deputy Secretary approved the UTPP this number was revised to $50 million based on the escalation of uranium in the market place. During the two year duration of the UTPP the market price of uranium continued to escalate and almost tripled in value by the end of the project. Net savings in future fuel costs (based on November 2006 uranium spot market prices) for Energy Northwest, BPA and the rate payers of Pacific Northwest is over $220 million.

UTPP Successes Included:

- The UTTP as a project meet all of its goals.
- All 672 cylinders were transferred from DOE-EM to USEC's Paducah Enrichment Plant safely without accidents or mishaps.
- All of the 672 cylinders have been processed and none were rejected prior to the start of processing. Several cylinders did require engineering evaluation of their physical condition prior to processing.
- Only one cylinder could not be completely processed (emptied). This was believed to be due to an unidentified physical problem with the cylinder. The cylinder was disposed of in the same manner as the other emptied cylinders.
- There were no contamination issues identified during the processing of 1.9 million kilograms of natural uranium.

UTPP Successes (cont.):

- The UTPP has had no detrimental effect on the domestic uranium market as evidenced by the continued rise in the market price of uranium over the period of the project.

- The UTPP was successfully implemented per the provisions of the agreements, without the need for intervention of senior management of any of the parties.

- The UTPP was completed in the fourth quarter of 2006, almost two months ahead of schedule and within its targeted budget.

- Savings to the U.S. taxpayers are estimated to be as much as $40 million, through cost avoidance for DOE in the DUF_6 disposal program.

- Over eight million dollars in funds to be transferred to DOE-EM and the U.S. Treasurary as payment for the source material (DUF_6).

Summary

- BPA and Energy Northwest wish to extend our thanks to all of the DOE staff who participated in the Pilot Project. We appreciated the staff's teamwork and due diligence in making this Pilot Project a huge success.

- The UTPP demonstrated that government agencies and private parties can cooperate in a joint venture that brings value to each of the parties involved. Joint ventures similar to the UTPP could form the basis for future projects that provide additional benefit to the individual agencies and to the tax payers in general in dealing with the department's uranium legacy.

Summary (cont.):

- The May 10, 2005 Deputy Secretary's determination directed that a Letter of Agreement (LOA) (05GS-75150) memorialize the UTPP. EM and BPA signed this LOA May 31, 2005 and item 10 of the LOA includes language that "BPA and EM intend to pursue the use of additional uranium inventories at the conclusion of the Pilot project…"

- We believe it would be beneficial to Department's goals and to the rate payers of the Pacific Northwest to conduct additional discussions with DOE-EM in an effort to pursue the possibility of a similar project or to explore new pilot projects using other surplus uranium materials slated for disposal.

DRAFT

United States Department of Energy

Excess Uranium Inventory Management

Committee on Energy & Commerce Staff Briefing

March 12, 2008

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May be exempt from public release under the Freedom of Information Act (5 U.S.C. 552), exemption number and category: 4, Commercial/Proprietary

Department of Energy review required before public release.
Name/Org: Edwin E Rutkowski Date: February 21, 2008
Guidance (if applicable):

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DOE Excess Uranium Inventories as of October 1, 2007

Draft – Numbers Not Final

Inventory	174-52 MTU	Enrichment Level	NU Equivalent Million lbs. U_3O_8	NU Equivalent MTU
Unallocated US Highly Enriched Uranium*	67.6	HEU	32.5	12,485
U.S.-Origin Natural Uranium as UF_6	5,156	NU	13.4	5,156
Russian-Origin Natural Uranium as UF_6	12,440	NU	32.3	12,440
Off-Spec Non-UF_6 **	4,455	DU/NU/LEU	7.5	2,900
Depleted Uranium as UF_6 ***	75,300	DU	67.5	25,950
Total DOE Excess Uranium Inventory:			153.2	58,931

* Unallocated uranium is not presently obligated or approved for a specific purpose or program.
** NU equivalent corresponds to NU and LEU material only.
*** Depleted UF_6 in metric tons having an assay equal to 0.35 percent ^{235}U but less than 0.711 percent ^{235}U. Natural uranium equivalent based on 0.20 percent ^{235}U tails assay.

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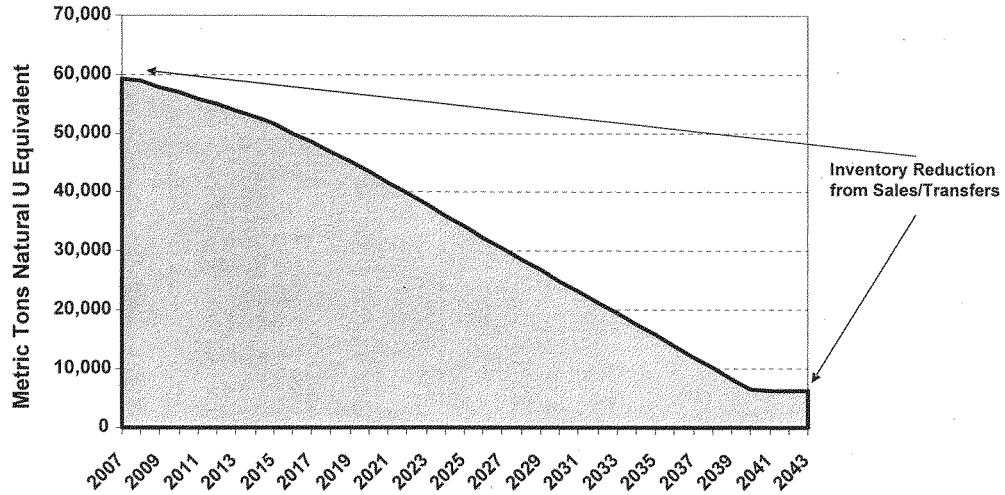
DOE Excess Uranium Inventory Plan 181785 (2)

DRAFT

Projected Drawdown of Excess Uranium Inventories

Expressed as units of Natural Uranium Equivalent



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

1900 MT

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DOE Excess Uranium Inventory Plan 181785 (3)

Background on DOE Uranium Inventories

- DOE has uranium inventories in various forms and assays. This includes depleted uranium, natural uranium, low enriched uranium (LEU) and highly enriched uranium (HEU). Only the natural uranium is in a commercial-grade, marketable form.
- Over the years, this uranium was acquired through defense programs, the HEU Purchase Agreement, the DOE uranium enrichment enterprise, and other sources.
- This plan considers only uranium excess to U.S. defense purposes.
- DOE incurs a cost to secure and maintain these various uranium inventories, which ultimately must be borne by the taxpayer.
- Sale of DOE inventories is constrained by statutes, policy, international agreements (e.g., USEC Privatization Act, U.S.-Russia (Feed Transfer) Agreement of 1999), and the availability of capacity to process material into a commercial-grade, marketable form.

PPPO Depleted UF6						
Assay	Paducah		Portsmouth		Total	
	CYL	KgU	CYL	KgU	CYL	KgU
< 0.15	10	64,460	2	7,806	12	72,266
0.15-0.20	5,337	38,878,224	4,471	32,886,538	9,808	71,764,762
0.20-0.25	8,306	65,697,117	4,570	37,713,740	12,876	103,410,857
0.25-0.30	12,012	102,706,611	4,508	38,252,425	16,520	140,959,036
Subtotal	**25,665**	**207,346,412**	**13,551**	**108,860,509**	**39,216**	**316,206,921**
0.30-0.32	5,068	43,270,402	637	5,340,074	5,705	48,610,476
0.32-0.34	320	2,734,019	156	1,313,010	476	4,047,029
0.34-0.36	6,223	53,322,704	5,188	43,717,024	11,411	97,039,728
0.36-0.38	159	1,362,601	68	572,208	227	1,934,809
0.38-0.40	548	4,695,704	424	3,555,005	972	8,250,709
Subtotal	**12,318**	**105,385,430**	**6,473**	**54,497,321**	**18,791**	**159,882,751**
0.40-0.42	350	2,999,124	566	4,762,471	916	7,761,595
0.42-0.44	16	137,111	49	403,496	65	540,607
0.44-0.46	762	6,512,841	4	33,880	766	6,546,721
0.46-0.48	5	42,857	0		5	42,857
0.48-0.50	5	34,425	0		5	34,425
0.50-0.52	17	143,259	14	117,282	31	260,541
0.52-0.54	43	362,575	42	354,110	85	716,685
0.54-0.56	0		0		0	
0.56-0.58	0		1	8,579	1	8,579
0.58-0.60	0		1	8,579	1	8,579
0.64-0.66	0		2	10,018	2	10,018
Subtotal	**1,198**	**10,232,192**	**679**	**5,698,415**	**1,877**	**15,930,607**
Total	**39,181**	**322,964,034**	**20,703**	**169,056,245**	**59,884**	**492,020,279**

Footnotes:

1 For cylinders (48-inch and 30-inch) with 1000 lbm or more net weight.

2 Omits inventories that are not readily fed to the cascade (High Tc-99, High TRU, non-compliant cylinders)

3 Omits "depleted" assays (slightly less than than normal) of the Tc-99 processing project. These cylinders will be maintained as part of the Strategic Reserve as "normal feed."

4 Inventory for <0.30 Assay from August 2007 computer runs; >0.30 are September 27, 2007

2-Oct-07

RECUSAL STATEMENT

DENNIS R. SPURGEON

1. In accordance with 18 U.S.C. § 208(a) and the "United States Senate Committee on Energy and Natural Resources Recusal Policy," dated May 6, 1993, I will not participate personally and substantially in any particular matter that has a direct and predictable effect on my financial interests or those of any other person whose interests are imputed to me, unless I first obtain a written waiver, pursuant to section 208(b)(1), or qualify for a regulatory exemption, pursuant to section 208(b)(2). I understand that the interests of the following persons are imputed to me: my spouse, minor children, or any general partner; any organization in which I serve as officer, director, trustee, general partner or employee; and any person or organization with which I am negotiating or have an arrangement concerning prospective employment.

2. I have directed R. Shane Johnson to route all matters referred to above to the appropriate person for further action.

Dennis R. Spurgeon

Dennis R. Spurgeon

Dated: 6 APRIL 2006

This Report Is Temporarily Restricted Pending Official Public Release.

United States Government Accountability Office
Washington, DC 20548

March 31, 2008

Congressional Requesters

Subject: *Nuclear Material: DOE Has Several Potential Options for Dealing with Depleted Uranium Tails, Each of Which Could Benefit the Government*

Since the 1940s, one mission of the Department of Energy (DOE) and its predecessor agencies has been processing uranium as a source of nuclear material for defense and commercial purposes. A key step in this process is the enrichment of natural uranium, which increases its concentration of uranium-235, the isotope of uranium that undergoes fission to release enormous amounts of energy. Before it can be enriched, natural uranium must be chemically converted into uranium hexafluoride. The enrichment process results in two principal products: (1) enriched uranium hexafluoride, which can be further processed for specific uses, such as nuclear weapons or fuel for nuclear power plants; and (2) leftover "tails" of uranium hexafluoride. These tails are also known as depleted uranium because the material is depleted in uranium-235 compared with natural uranium.

Since 1993, uranium enrichment activities at DOE-owned uranium enrichment plants have been performed by the U.S. Enrichment Corporation (USEC), formerly a wholly owned government corporation that was privatized in 1998. However, DOE still maintains approximately 700,000 metric tons of depleted uranium tails in about 63,000 metal cylinders in storage yards at its Paducah, Kentucky, and Portsmouth, Ohio, enrichment plants. It must safely maintain these cylinders because the tails are dangerous to human health and the environment. Uranium hexafluoride is radioactive and forms extremely corrosive and potentially lethal compounds if it contacts water. DOE also maintains large inventories of natural and enriched uranium that are also surplus to the department's needs.

Tails have historically been viewed as a waste product because considerable enrichment processing is required to further extract the remaining useful quantities of uranium-235. In the past, low uranium prices meant that these enrichment services would cost more than the relatively small amount of uranium-235 extracted would be worth. However, an approximately tenfold increase in uranium prices—from approximately $21 per kilogram of uranium in the form of uranium hexafluoride in November 2000 to about $200 per kilogram in February 2008—has potentially made it profitable to re-enrich some tails to further extract uranium-235. Even with the current higher uranium prices, however, only DOE's tails with higher concentrations of uranium-235 (at least 0.3 percent) could currently be profitably re-enriched, according to industry officials. About one-third of DOE's tails contain uranium-235 concentrations at that level or higher.

In this context, you asked us to determine (1) DOE's potential options for beneficially reusing or indefinitely storing its tails, and (2) the potential value of DOE's tails and factors that affect the value.

To determine DOE's potential options for its tails, we reviewed a draft uranium sales strategy that DOE has been developing since 2005, as well as a March 2008 DOE policy statement outlining how the department intends to manage its inventory of uranium—including depleted, natural, and enriched uranium. As part of our evaluation of DOE's potential options, we reviewed relevant statutes and regulations, court decisions, and other legal documents. We also requested DOE's position on its legal authority to implement options for its tails, but DOE declined to provide its position; our position is provided below. Specifically, the enclosure contains our analysis of DOE's legal authority to sell or transfer the tails in their current form, as well as to re-enrich and sell the tails and to store the tails indefinitely. In addition to this legal analysis, we interviewed officials from DOE's Office of Nuclear Energy, which is developing the uranium sales strategy, and DOE's Office of Environmental Management, which is in charge of the day-to-day management of DOE's uranium inventories stored at Paducah and Portsmouth. We also visited DOE's Portsmouth and Paducah Project Office in Lexington, Kentucky, to discuss depleted uranium management issues with DOE officials. In addition, we interviewed officials from 10 U.S. nuclear power utilities, enrichment services companies, and others in the nuclear industry regarding their commercial interests in the tails. To estimate the potential value of DOE's tails, we developed a model using standard formulas for the amounts of enriched uranium and tails produced from given quantities of uranium and enrichment services. We obtained data from DOE on the quantities and uranium-235 concentrations of tails in the department's inventory. The model also used uranium price data obtained from nuclear industry trade publications. These data are commonly used in the nuclear industry as standard measures of the market price for uranium; we determined that the data were sufficiently reliable for our purposes. We conducted this performance audit from July 2007 to March 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Results in Brief

In general, DOE's potential options for its tails include selling the tails "as is," re-enriching the tails, or storing them indefinitely. However, we believe that DOE's current legal authority to sell its depleted uranium inventory in its current unprocessed form is doubtful and under rules of statutory construction, DOE likely lacks such authority. We found that DOE generally has authority to carry out the re-enrichment and storage options. The department has not finished a comprehensive assessment of these options and is still evaluating the details of how such options might be implemented.

- *DOE's authority to sell the tails in their current unprocessed form is doubtful.* Because of specific statutory language in 1996 legislation governing DOE's disposition of its uranium, we believe that DOE's authority to sell the

unprocessed tails is doubtful. DOE may only sell or transfer uranium in a manner consistent with the provisions of the statute. While the statute authorizes and regulates DOE's sale or transfer of a number of types of uranium, it does not specify conditions for the sale or transfer of depleted uranium tails. Therefore, under rules of statutory construction, DOE likely lacks such authority. However, if Congress were to provide the department with the needed authority, firms such as nuclear power utilities and enrichment companies may be interested in purchasing these tails and re-enriching them as a source of nuclear fuel. Industry officials told us that buyers would discount, perhaps steeply, their offered prices to make buying tails attractive compared with purchasing natural uranium on the open market. That is, DOE might get a discounted price for the tails to compensate buyers for additional risks, such as rising enrichment costs or buyers' inability to obtain sufficient enrichment services.

- *DOE could contract to re-enrich the tails.* Although DOE's authority to sell the unprocessed tails is doubtful, no such general legal impediment exists for the department to itself contract to re-enrich the tails and sell the resulting natural or enriched uranium. Although DOE would have to pay for re-enrichment, it could be better off selling the re-enriched uranium instead of the unprocessed tails if its re-enrichment costs were less than the discount it would have to offer to compensate a buyer for the risks associated with arranging for re-enrichment.

- *DOE could store the tails indefinitely.* DOE also has the general legal option to store the tails indefinitely. While this option conforms to an existing DOE plan to convert tails into a more stable form for long-term storage, storing the tails indefinitely could prevent DOE from obtaining the potentially large revenue resulting from sales at currently high uranium prices. It would also continue to incur associated storage and maintenance costs that currently amount to about $4 million per year. Moreover, after converting the tails to a more stable form, DOE would incur higher costs to re-enrich the tails if it decided later to pursue such an approach. This is because DOE would have to chemically reconvert the tails to the uranium compound required for re-enrichment.

DOE has not completed a comprehensive assessment to decide among its sales, re-enrichment, or storage options. The department has been developing a uranium management plan since 2005, and DOE issued a March 2008 policy statement that established a general framework for how DOE plans to manage its uranium inventories. However, the policy statement is not a comprehensive assessment of the options for DOE's tails. For example, the policy statement does not discuss whether it would be more advantageous to sell the higher-concentration tails as is (if authorized) or to re-enrich them, and it does not contain details on when any potential sales or re-enrichment may occur.

The potential value of DOE's depleted uranium tails is substantial, but changing market conditions could greatly affect the tails' value. Based on February 2008 uranium prices and enrichment costs and assuming sufficient re-enrichment capacity was available, we estimate DOE's tails to have a net value of $7.6 billion; however, we

would like to emphasize that this estimate is very sensitive to changing uranium prices, which recently have been extremely volatile, as well as to the availability of enrichment capacity. For example, using the lowest and highest uranium prices over the past 8 years, our model shows the value of DOE tails could range from almost nothing to more than $20 billion. In addition, excess re-enrichment capacity currently is very limited, and the amount of available re-enrichment capacity for tails over the next decade is uncertain. Accordingly, the actual amount of revenue that DOE could obtain from the tails could be much higher or lower than our $7.6 billion estimate, depending upon uranium prices at the time the material is marketed and the department's ability to obtain sufficient enrichment services, as well as the price of those services.

We are recommending that Congress consider clarifying DOE's statutory authority to manage depleted uranium, including explicit direction about whether and how DOE may sell the tails in their current form. Depending on the terms of such legislation, this could reap significant benefits for the government because of the potentially large amount of revenue that could be obtained. In any event, enacting explicit provisions regarding DOE's disposition of depleted uranium would provide stakeholders with welcome legal clarity and could help avoid litigation that would interrupt DOE's efforts to obtain maximum value for its tails. We also are recommending that the Secretary of Energy complete a comprehensive uranium management assessment as soon as possible, to best take advantage of recent increases in uranium prices.

On March 25, 2008, we met with DOE officials, including the Deputy Assistant Secretary for Corporate Communications and External Affairs in DOE's Office of Nuclear Energy, to obtain oral comments on this report. DOE did not comment either on our finding that DOE's legal authority to sell or transfer depleted uranium in its current form was doubtful or on our recommendation that Congress consider clarifying DOE's statutory authority to manage depleted uranium. Although DOE officials did not agree or disagree with our recommendation that the department complete a comprehensive uranium management assessment as soon as possible, they did request that we clarify the recommendation to more explicitly outline what the assessment should contain. We agreed and modified the report accordingly. DOE also provided technical comments, which were incorporated as appropriate.

DOE Has Potential Options for the Tails but Has Not Finished a Comprehensive Assessment of Them

DOE's potential options for its tails include selling the tails "as is," re-enriching them, or storing them indefinitely. However, DOE's legal authority to sell the tails in their current form is doubtful. Although we found that DOE generally has authority to carry out the re-enrichment and storage options, the department has not finished a comprehensive assessment of these options, and it is still evaluating the details of how such options might be implemented.

DOE's Legal Authority to Sell the Tails in their Current Form Is Doubtful

While selling the tails in their current unprocessed form is a potential option, we believe that DOE's authority to conduct such sales is doubtful because of specific

statutory language in 1996 legislation governing DOE's disposition of its uranium. The enclosure contains our analysis of DOE's authority to sell or transfer its depleted uranium in its current form, as well as to re-enrich and sell the tails and to store the tails indefinitely. As our analysis explains, in 1996, Congress enacted section 3112 of the USEC Privatization Act,[1] which limits DOE's general authority, under the Atomic Energy Act[2] or otherwise, to sell or transfer uranium. In particular, section 3112 explicitly bars DOE from selling or transferring "any uranium"—including but not specifically limited to certain forms of natural and enriched uranium—"except as consistent with this section." Section 3112 then specifies conditions for DOE's sale or transfer of natural and enriched uranium of various types, including conditions in section 3112(d) for sales of natural and low-enriched uranium from DOE's inventory. To ensure the domestic uranium market is not flooded with large amounts of government material, in section 3112(d), Congress required DOE to determine that any such inventory sales will not have a material adverse impact on the domestic uranium industry. Congress also required in section 3112(d) that DOE determine it will receive adequate payment—at least "fair market value"—if it sells this uranium and that DOE obtain a determination from the President that such materials are not necessary for national security.

Nowhere, however, does section 3112(d) or any other provision of section 3112 explicitly provide conditions for DOE to transfer or sell depleted uranium. Because section 3112(a) states that DOE may not "transfer or sell any uranium . . . except as consistent with this section," and because no other part of section 3112 sets out the conditions for DOE to transfer or sell depleted uranium, we believe that, under rules of statutory construction, DOE likely lacks authority to sell the tails. While courts have not addressed this question before and thus the outcome is not free from doubt, this interpretation applies the plain language of the statute. It also respects the policy considerations and choices Congress made in 1996 when presented with the disposition of DOE's valuable uranium in a crowded and price-sensitive market. Finally, this reading of DOE's authority is consistent with how courts address changes in circumstances after a law is passed. Specifically, statutes written in comprehensive terms apply to unanticipated circumstances if the new circumstances reasonably fall within the scope of the plain language. Thus, under the current terms of section 3112, DOE's sale of its tails would be covered by the statute's general prohibition on sale of uranium, even if tails were not part of the universe Congress explicitly had in mind when it enacted the statute in 1996.

Should Congress grant DOE the needed legal authority by amending the USEC Privatization Act or through other legislation, firms such as nuclear power utilities and enrichment companies would likely be interested in purchasing at least that portion of the tails with higher concentrations of extractable uranium-235 as a valuable source for nuclear fuel. For example, officials from 8 of 10 U.S. nuclear utilities indicated tentative interest in such a purchase. Individual utilities were often interested in limited quantities of DOE's tails because they were concerned about depending upon a single source to fulfill all of their requirements. Multiple utilities acting together as a consortium could mitigate these concerns and purchase larger quantities of tails. Some enrichment firms also told us of some interest in purchasing

[1]USEC Privatization Act, Pub. L. No. 104-134, § 3112, 110 Stat. 1321-344, 42 U.S.C. § 2297h-10.
[2]Atomic Energy Act of 1954, as amended, 42 U.S.C. §§ 2011 *et seq.*

portions of the inventory, but their anticipated excess enrichment capacity to process the tails into a marketable form affected both the quantity of tails they would purchase and the timing of any purchase.

Potential buyers suggested various commercial arrangements, including purchasing the tails through a competitive sale, such as an auction, or through negotiations with DOE. However, industry officials told us that buyers would discount, perhaps steeply, their offered prices to make buying tails attractive compared with purchasing natural uranium on the open market. That is, DOE might get a discounted price for the tails to compensate buyers for additional risks, such as rising enrichment costs or buyers' inability to obtain sufficient enrichment services. In addition, some potential buyers noted that any purchase would depend upon confirming certain information, such as that the tails were free of contaminants that could cause nuclear fuel production problems and that the cylinders containing the tails—some of which are 50 years old and may not meet transportation standards—could be safely shipped.

DOE Could Re-enrich Its Tails

Although DOE's legal authority to sell the tails in their current form is doubtful, DOE has the general legal option, as discussed in the enclosure, of re-enriching the tails and then selling the resulting natural or enriched uranium. DOE would have to contract for enrichment services commercially because the department no longer operates enrichment facilities itself. Furthermore, DOE would have to find a company with excess enrichment capacity beyond its current operations, which may be particularly difficult if large amounts of enrichment processing were required. Within the United States today, for example, the only operating enrichment facility is DOE's USEC-run Paducah, Kentucky, plant, and almost all of its enrichment capacity is already being used through 2012, when the facility may stop operating.[3] USEC and at least two other companies are also constructing or planning to construct new enrichment facilities in the United States that potentially could be used to re-enrich DOE's tails.

Although DOE would have to pay for re-enrichment, it might obtain more value from selling the re-enriched uranium instead of the tails if its re-enrichment costs were less than the discount it would have to offer to sell the tails as is. Enrichment firms with whom we spoke told us that they would be interested in re-enriching the tails for a fee. The quantity of tails they would re-enrich annually would depend on the available excess enrichment capacity at their facilities.

Additionally, as noted above, prior to selling any natural or enriched uranium that results from re-enriching tails, DOE would be required under section 3112(d) of the USEC Privatization Act to determine that sale of the material would not have a material adverse impact on the domestic uranium industry and that the price paid to DOE would provide at least fair market value. Section 3112(d) also would require DOE to obtain the President's determination that the material is not needed for national security.

[3]USEC plans to shut down the Paducah plant after it opens a new enrichment plant at Portsmouth that uses newer enrichment technology. Because this new plant's initial capacity will be less than the Paducah plant's current capacity, it may also have little excess enrichment capacity to re-enrich DOE's tails.

DOE Could Store the Tails

DOE also has the general legal option, as discussed in the enclosure, to store the tails indefinitely. In the late 1990s, when relatively low uranium prices meant that tails were viewed as waste, DOE developed a plan for the safe, long-term storage of the material. DOE is constructing two new facilities to chemically convert its tails into a more stable and safer uranium compound that is suitable for long-term storage. DOE estimates that after the conversion facilities begin operating in 2009, it will take approximately 25 years to convert its existing tails inventory.

Storing the tails indefinitely could prevent DOE from taking advantage of the large increase in uranium prices to obtain potentially large amounts of revenue from material that was once viewed as waste. DOE would also continue to incur costs associated with storing and maintaining the cylinders containing the tails. These costs amount to about $4 million annually. Sale (if authorized) or re-enrichment of some of DOE's tails could also reduce the amount of tails that would need to be converted and, thereby, save DOE some conversion costs.[4]

Moreover, once the tails were converted into a more stable form of uranium oxide, DOE's costs to re-enrich the tails would be higher if it later decided to pursue this approach. This is because of the cost of converting the uranium oxide back to uranium hexafluoride, a step that would be required for re-enrichment. However, according to DOE officials, after the conversion plants begin to operate, the plants will first convert the lower concentration tails because they most likely will not be economically worthwhile to re-enrich. This would give DOE additional time to sell or re-enrich the more valuable higher-concentration tails.

DOE Has Not Completed a Comprehensive Assessment of Options for Its Tails

DOE has been developing a plan since 2005 to sell excess uranium from across its inventories of depleted, natural, and enriched uranium to generate revenues for the U.S. Treasury. In March 2008, DOE issued a policy statement that established a general framework for how DOE plans to manage its uranium inventories. One feature of this policy statement is the establishment of an annual cap on total uranium sales from all of DOE's inventories. The cap is designed to minimize any material adverse impact on domestic uranium producing companies that could result from DOE depressing uranium prices by selling large amounts of uranium. Thus, under this policy, the maximum amount of tails that DOE would sell annually will depend on the amount of planned sales from its other uranium inventories. In addition, because most uranium to be used as fuel for U.S. nuclear power plants comes from foreign sources, DOE may also choose to retain, rather than sell, some of its uranium as a reserve stockpile to be used in case of a significant disruption in world supplies.

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[4]Although the amount of depleted uranium hexafluoride that would need to be converted to uranium oxide for long-term storage would be reduced if DOE decided to re-enrich its higher-assay tails, the need for conversion would not be completely eliminated. This is because the re-enrichment of higher-assay tails would create a new waste stream of lower-assay tails that would need storage. In addition, the majority of DOE's tails are lower assay that are not economical to re-enrich at current uranium prices and enrichment costs. It will therefore be necessary to convert these remaining tails for safe, long-term storage and eventual permanent disposition.

However, the March 2008 policy statement is not a comprehensive assessment of the sales, re-enrichment, or storage options for DOE's tails. The policy statement lacks specific information on the types and quantities of uranium that the department has in its inventory. Furthermore, the policy statement does not discuss whether it would be more advantageous to sell the higher-concentration tails as is (if authorized) or to re-enrich them, and it does not contain details on when any sales or re-enrichment may occur or DOE's legal authority to carry out these options under section 3112 of the USEC Privatization Act. It also lacks information on the uranium market conditions that would influence any DOE decision to potentially sell or re-enrich tails. Further, it does not analyze the impact of such a decision on the domestic uranium industry, and it does not provide guidance on how a decision should be altered in the event that market conditions change. Although the policy statement states that DOE will identify categories of tails that have the greatest potential market value and that the department will conduct cost-benefit analyses to determine what circumstances would justify re-enriching and/or selling potentially valuable tails, it does not have specific milestones for doing so. Instead, the policy statement states that this effort will occur "in the near future."

DOE's Depleted Uranium Inventory Is Potentially Worth Billions of Dollars, but Many Factors Could Greatly Change Its Value

At current uranium prices, we estimate DOE's tails to have a net value of $7.6 billion; however, we would like to emphasize that this estimate is very sensitive to changing uranium prices, which recently have been extremely volatile, as well as to the availability of enrichment capacity. This estimate assumes the February 2008 published uranium price of $200 per kilogram of natural uranium in the form of uranium hexafluoride and $145 per separative work unit—the standard measure of uranium enrichment services. Our model also assumes the capacity to re-enrich the higher-concentration tails, and subtracts the costs of the needed enrichment services. It also takes into account the cost savings DOE would realize from reductions in the amount of tails that needed conversion to a more stable form for storage, as well as the costs to convert any residual tails.

As noted above, this estimate is very sensitive to price variations for uranium as well as to the availability of enrichment services. Uranium prices are very volatile, and a sharp rise or fall in prices could greatly affect the value of the tails. For example, since 2000, uranium prices have varied from a low of about $21 per kilogram in November 2000 to a high of about $360 per kilogram in mid-2007, before falling to their recent level of about $200 per kilogram. Substituting the high and low end of historical uranium prices over the past 8 years for current prices results in a range of values for the tails from being nearly worthless, assuming about $21 per kilogram of uranium, to over $20 billion, assuming $360 per kilogram of uranium. There is no consensus among industry players whether uranium prices will fall or rise in the future, or on the magnitude of any future price changes. Furthermore, the introduction of additional uranium onto the market by the sale of large quantities of DOE depleted, natural, or enriched uranium—assuming DOE obtains authority to sell depleted uranium—could also lead to lower uranium prices. Therefore, according to DOE officials, DOE's uranium sales strategy, when completed, will likely call for limits on the quantity of uranium the department would sell annually to help achieve DOE's goal of minimizing the negative effects on domestic uranium producers.

However, this will lengthen the time necessary to market DOE's uranium, increasing the time the department is exposed to uranium price volatility. These factors all result in great uncertainty of the valuation of DOE's tails.

In addition, the enrichment capacity available for re-enriching tails may be limited, and the costs of these enrichment services are uncertain. For example, USEC currently only has a small amount of excess enrichment capacity at its Paducah plant. If it used the spare capacity, USEC would only be able to re-enrich about 14 percent of DOE's most economically attractive tails[5] between now and the possible closing of the plant in 2012. Although USEC officials told us the company was willing to explore options to extend the Paducah plant's operations beyond 2012 and dedicate Paducah's capacity solely to re-enriching DOE's tails after this point, negotiations between the company and DOE would be needed to determine the enrichment costs that would be paid by DOE. The Paducah plant uses a technology developed in the 1940s that results in relatively high production costs. Even if the Paducah plant were to be dedicated entirely to re-enriching DOE tails after 2012, over a decade would be required to complete the work because of limitations on the annual volume of tails that can be physically processed by the plant. This lengthy period of time would expose DOE to risks of uranium price fluctuations and increasing maintenance costs.

USEC and other companies are constructing or planning to construct enrichment plants in the United States that utilize newer, lower-cost technology. However, these facilities are not expected to be completed until various times over the next decade. It is unclear exactly when these facilities will be fully operating, the extent to which they will have excess enrichment capacity to re-enrich DOE's tails, and what enrichment costs DOE could expect to pay. For example, the size of the fee DOE may have to pay an enrichment company to re-enrich its tails would be subject to negotiation between DOE and the company.

Conclusions

Recent dramatic increases in uranium prices present the U.S. government with an opportunity to gain some benefit from material that was once considered a liability. Under current law, however, one potential avenue for dealing with DOE's depleted uranium tails—sale of the material in its current form—is likely closed to the department. Obtaining legal authority from Congress to sell depleted uranium under USEC Privatization Act section 3112 or other legislation would provide the department with an additional option in determining the best course of action to obtain the maximum financial benefit from its tails.

Unfortunately, DOE has not completed a comprehensive assessment of its options with sufficient speed to take advantage of current market conditions. Despite working since 2005 to develop a plan for its uranium inventories, DOE's March 2008 policy statement on the management of its excess uranium inventories lacks detailed information on the types and amounts of uranium that the department plans to potentially sell, further enrich, or store. Although pledging to conduct appropriate

[5]At current uranium prices, DOE's most economically attractive tails have a uranium-235 assay of greater than 0.30 percent. DOE estimates that it has about 260,000 metric tons of tails with an assay of greater than 0.30 percent. The remaining approximately 470,000 metric tons of tails have an assay of less than 0.30 percent and would therefore require additional enrichment processing to re-enrich.

cost-benefit analyses as well as analyses on the impact of any proposal on the domestic uranium industry, the policy statement lacks specific milestones for doing so. Because of the potentially significant amounts of revenue that could be obtained from DOE's uranium inventories and the extreme volatility of the uranium market, it is important for the department as soon as possible to complete a comprehensive uranium management assessment that details DOE's options, its authority to implement these options, and the impact of these options on the domestic uranium industry. Without such an assessment that contains detailed information on each of its options, DOE will be unable to quickly react to rapidly changing market conditions to achieve the greatest possible value from its uranium inventories.

Matter for Congressional Consideration

Congress should consider clarifying DOE's statutory authority to manage depleted uranium, under the USEC Privatization Act or other legislation, including explicit direction about whether and how DOE may sell or transfer the tails in their current form. Depending on the terms of such legislation, this could reap significant benefits for the government because of the potentially large amount of revenue that could be obtained. In any event, enacting explicit provisions regarding DOE's disposition of depleted uranium would provide stakeholders with welcome legal clarity and help avoid litigation that could interrupt DOE's efforts to obtain maximum value for the tails.

Recommendations for Executive Action

To determine the best options available for DOE's tails, the Secretary of Energy should complete the development of a comprehensive uranium management assessment as soon as possible. The assessment should contain detailed information on the types and quantities of depleted, natural, and enriched uranium the department currently manages and a comprehensive assessment of DOE's options for this material, including the department's authority to implement these options. Furthermore, the assessment should analyze the impact of each of these options on the domestic uranium industry and provide details on how implementation of any of these options should be adjusted in the event that market conditions change.

Agency Comments

We provided a draft of this report to DOE for review and comment. On March 25, 2008, we met with DOE officials, including the Deputy Assistant Secretary for Corporate Communications and External Affairs in DOE's Office of Nuclear Energy, who provided us with oral comments on the draft. The officials did not comment on our finding that DOE's legal authority to sell or transfer depleted uranium is doubtful or on our recommendation that Congress consider clarifying DOE's statutory authority to manage depleted uranium.

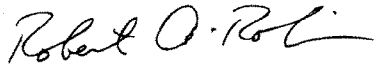
The DOE officials we met with did not agree or disagree with our recommendation that the department complete a comprehensive uranium management assessment as soon as possible. However, they did request that we clarify the recommendation to more explicitly outline what the assessment should contain. In response, we modified the report to include additional information on DOE's March 2008 uranium

policy statement and how the policy lacks specific information on the types and quantities of uranium DOE manages, the market conditions under which DOE may choose to sell uranium, and the timing of any potential sales.

DOE also provided technical comments, which were incorporated as appropriate.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to the Secretary of Energy. In addition, the report will be available at no charge on GAO's Web site at http://www.gao.gov.

If you or your staffs have any questions or need additional information, please contact Robert A. Robinson at (202) 512-3841 or robinsonr@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Major contributors to this report were Ryan T. Coles (Assistant Director), Ellen Chu, Terry Hanford, Karen Keegan, Omari Norman, and Franklyn Yao.



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Enclosure

List of Requesters

The Honorable Jeff Bingaman
Chairman
The Honorable Pete V. Domenici
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United States Senate

The Honorable John D. Dingell
Chairman
The Honorable Joe Barton
Ranking Member
Committee on Energy and Commerce
House of Representatives

The Honorable Bart Stupak
Chairman
Subcommittee on Oversight and Investigations
Committee on Energy and Commerce
House of Representatives

Enclosure: GAO's Legal Analysis of DOE's Current Authority to Manage Depleted Uranium

Introduction and Summary of Conclusions

As part of the Government Accountability Office's review of the Department of Energy's (DOE) potential options for managing its inventory of excess depleted uranium (also known as "tails"), we examined DOE's legal authority to implement three basic options: (1) re-enriching the tails and then selling or transferring them, (2) storing the un-enriched tails indefinitely, and (3) selling or transferring the inventory of tails "as is."

We conclude that DOE has general authority under the Atomic Energy Act to carry out the first and second options—to re-enrich and then sell or transfer the tails, as well as to store them indefinitely. However, we believe that because of constraints on DOE's Atomic Energy Act authority in the USEC Privatization Act, the department's authority to carry out the third option—to sell or transfer the tails in their current form—is doubtful. We believe that under rules of statutory construction, DOE likely lacks such authority under current law.

Because this is an issue of first impression, and because the question could significantly affect the public interest and DOE's development of a comprehensive strategy for its excess-uranium inventory, we recommend that Congress consider enacting legislation clarifying the conditions (if any) under which DOE may sell or transfer its depleted uranium. Depending on the terms of such legislation, this could reap benefits for the government because of the potentially significant revenue that could be obtained. In any event, such clarification would provide stakeholders with welcome legal clarity, potentially enhance the attractiveness to interested purchasers, and help avoid litigation that could interrupt DOE's efforts to obtain maximum value for the public.[6]

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[6]We also examined whether DOE is authorized to sell or transfer its depleted uranium tails under section 314 of the 2006 Energy and Water Development Appropriations Act, Pub. L. No. 109-103, 119 Stat. 2247, 2281 (Nov. 19, 2005), a position advanced to us by USEC. That provision states in part: "SALES OF URANIUM.—(a) IN GENERAL.—Notwithstanding any other provision of Federal law, including section 3112 of the USEC Privatization Act . . . and section 3302 of title 31, United States Code, [DOE] is authorized to barter, transfer or sell uranium (including natural uranium concentrates, natural uranium hexafluoride, or in any form or assay) and to use any proceeds, without fiscal year limitation, to remediate uranium inventories held by [DOE]."

Without expressing a view on whether these terms might otherwise authorize DOE's sale of its uranium inventories, we conclude that this provision is not permanent legislation and thus not a continuing source of authority, as USEC has suggested. DOE officials told us they agree with this conclusion. Generally, provisions of an annual appropriations act are considered temporary unless Congress indicates otherwise. B-309704, Aug. 28, 2007. The question is whether section 314 contains words of futurity indicating that Congress intended the provision to be permanent. It does not. The language "notwithstanding any other provision of law" refers to other provisions of law in effect during the fiscal year covered by the appropriations act. The language "without fiscal year limitation" authorizes DOE to obligate without fiscal year limitation any proceeds from uranium sold during the period section 314 was in effect. Because section 314 contained no words of futurity, it is no longer in effect. Thus, whatever the scope of authority in section 314, it does not authorize future DOE sales or transfers.

Analysis[7]

A. DOE authority to re-enrich and sell or transfer the tails

DOE has general authority under the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2011 *et seq.* (AEA), to re-enrich its depleted uranium inventory to natural or low-enriched levels and then to sell or transfer the re-enriched product. First, AEA section 41, 42 U.S.C. § 2061, authorizes DOE to re-enrich depleted uranium to low-enriched levels, and AEA sections 63 and 66, 42 U.S.C. §§ 2093, 2096—which authorize DOE's acquisition and distribution of source material—implicitly authorize DOE to re-enrich depleted uranium to natural levels. Second, AEA sections 53, 63, and 161m, 42 U.S.C. §§ 2073, 2093, 2201(m), authorize DOE to transfer this re-enriched uranium, subject to certain conditions, to appropriately licensed entities such as nuclear power reactor operators.

This general AEA authority is limited by any applicable restrictions in the USEC Privatization Act, enacted in 1996. Section 3112(a) of the act, 42 U.S.C. §§ 2297h-10(a), prohibits DOE from transferring or selling "any uranium (including natural uranium concentrates, natural uranium hexafluoride, or enriched uranium in any form) . . . except as consistent with this section." The remaining provisions of section 3112 then specify the conditions under which DOE may sell or transfer various types of natural and enriched uranium. Thus, DOE is authorized to sell or transfer re-enriched depleted uranium provided such transactions satisfy the remaining section 3112 conditions.

B. DOE authority to store the un-enriched tails indefinitely

DOE has general authority under the AEA to store its unenriched depleted uranium indefinitely, as well as to convert the tails to a more stable form for storage. We believe this authority is implicit under AEA sections 63 and 66, which, as discussed above, authorize DOE to acquire and distribute source material. This authority is also implicit under AEA section 41, which authorizes DOE to enrich uranium, a process which inevitably generates depleted uranium. In addition, to the extent the department's depleted uranium is "hazardous waste," AEA section 91a(3), 42 U.S.C. § 2121(a)(3), explicitly authorizes DOE to store, process, transport, and dispose of "hazardous waste (including radioactive waste) resulting from nuclear materials production, weapons production and surveillance programs, and naval nuclear propulsion programs."

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[7]GAO's practice when rendering legal opinions regarding agency-related matters is to solicit the agency's position on the subject matter of the request. GAO, *Procedures and Practices for Legal Decisions and Opinions*, GAO-06-1064SP (Washington, D.C.: Sept. 5, 2006), available at http://www.gao.gov/legal/cgdecisions-faq.html (last visited March 20, 2008). We requested DOE's position on its authority to manage depleted uranium under the Atomic Energy Act and the USEC Privatization Act, as well as any related documents. Letters from Susan D. Sawtelle, GAO Managing Associate General Counsel, to David R. Hill, DOE General Counsel, December 12, 2007, and to Eric J. Fygi, DOE Deputy General Counsel, January 11, 2008. DOE declined to provide its position on these issues. Letter from Eric J. Fygi to Susan D. Sawtelle, December 21, 2007. The department subsequently provided certain documents, Letter from Eric J. Fygi to Susan D. Sawtelle, January 25, 2008, but later told us these did not necessarily reflect the department's legal position.

Again, this AEA authority is limited by any applicable restrictions in the USEC Privatization Act. Section 3112 of that act does not apply to, and thus does not restrict, storage of DOE's uranium. Section 3113, 42 U.S.C. § 2297h-11, does not apply to or restrict storage of its own depleted uranium, but it is relevant in that it reinforces DOE's authority to store this type of uranium under the AEA. Section 3113(a) requires DOE to accept depleted uranium from other entities for storage and disposal in the event the depleted uranium is determined to be "low-level radioactive waste." If the waste generator is a Nuclear Regulatory Commission (NRC) licensee, DOE must take title and possession of the depleted uranium "at an existing DUF6 [depleted uranium] storage facility." Implicit in these provisions is that DOE may store and dispose of its own depleted uranium waste as well, under its AEA or other authority.

C. DOE authority to sell or transfer the tails in their current form

DOE has general authority under the AEA to sell or transfer depleted uranium in its current form. As noted, sections 63 and 161m authorize DOE to distribute or sell "source material" to appropriately licensed entities, provided certain conditions are met, and depleted uranium is "source material." AEA section 11z, 42 U.S.C. § 2014(z).

Again, this AEA authority is limited by any applicable restrictions in the USEC Privatization Act. While this is an issue of first impression, we believe DOE's authority to sell or transfer depleted uranium in its current form is doubtful. We believe courts applying rules of statutory construction would likely find DOE lacks such authority under current law.

As noted above, section 3112 of the USEC Privatization Act, entitled "Uranium transfers and sales," begins with a broad prohibition:

> "[DOE] shall not . . . transfer or sell *any uranium* (*including* natural uranium concentrates, natural uranium hexafluoride, or enriched uranium in any form) to *any* person *except as consistent with this section.*" (Emphasis added.)

The remainder of section 3112 then prescribes the conditions under which DOE may sell or transfer particular types of uranium, namely, so-called Russian-origin uranium (subsection (b)); natural and enriched uranium transferred to USEC (subsection (c)); natural and low-enriched uranium sold from DOE's inventory (subsection (d)); and enriched uranium transferred to federal agencies, state and local agencies, nonprofit, charitable or educational institutions, and others (subsection (e)). No provision explicitly addresses depleted uranium.

Read naturally and in accordance with its plain language, section 3112 prohibits DOE from selling or transferring its depleted uranium. The tails consist of uranium-235 and uranium-238, whether they are deemed a waste or a valuable commodity, and a DOE Office of Environmental Management official confirmed to us that operationally, the department treats depleted, natural, and enriched uranium all as "uranium." Thus, depleted uranium would be covered by section 3112 as a type of "any

uranium."[8] This plain meaning is reinforced by the fact that section 3112(a) lists nonexclusive examples of uranium—"any uranium (including natural uranium . . . or enriched uranium in any form)"—making clear that additional types of uranium are covered by section 3112. A 2005 DOE internal legal memorandum (2005 DOE Memorandum) reaches the same conclusion.[9] Thus, because DOE may sell or transfer uranium only as consistent with the terms of sections 3112(b)-3112(e), and because none of those provisions specifies conditions under which depleted uranium may be sold, the plain words of the statute prohibit it.

The statutory structure and legislative history support this conclusion. It is clear that when Congress passed the USEC Privatization Act in 1996, it was familiar with depleted uranium as a category of uranium requiring management. Because depleted uranium was only considered as a valueless waste at that time, Congress only explicitly referred to one management option in the statute: disposal.[10] As noted, in section 3113, Congress required DOE to take responsibility for disposal of other entities' depleted uranium, should it ever be determined to be a "low-level radioactive waste." As NRC noted recently in making such a determination, however, when depleted uranium is treated as a "resource," rather than a waste, section 3113 does not apply. See NRC, In re Louisiana Energy Services, L.P. (National Enrichment Facility), No. CLI-05-05 (Jan. 18, 2005), at 1, 3, 15, 17. In that event—where depleted uranium is a resource to be sold or transferred—section 3112, by its terms, would apply. The fact that Congress did not specify section 3112 conditions under which depleted uranium may be sold, as it did for DOE's other valuable uranium, reflects only that depleted uranium was not deemed valuable in 1996. It does not reflect congressional intent that valuable depleted uranium is not subject to section 3112's general prohibition against sales of "any uranium." While this result may appear anomalous because depleted uranium is now considered a potentially highly valuable commodity and a potential source of revenue for the federal government, that is a matter for Congress to remedy, if it so chooses.

A recently issued DOE policy on disposition of its excess uranium inventory recognizes this increase in value for depleted uranium.[11] To take advantage of this development, department officials suggested to us that they would be authorized to sell the tails in their current form using DOE's general AEA section 161m authority, without regard to the prohibitions in the USEC Privatization Act. They suggested

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[8]See, e.g., *Walters v. Metropolitan Educational Enterprises, Inc.*, 519 U.S. 202 (1997) (it is a fundamental principle of statutory construction that words in a statute must be given their ordinary or natural meaning whenever possible); *Ali v. Federal Bureau of Prisons*, 128 S. Ct. 831 (U.S. Jan. 22, 2008) ("[R]ead naturally, the word 'any' has an expansive meaning that is, 'one or some indiscriminately of whatever kind.'").

[9]The 2005 DOE Memorandum (which DOE indicated may not represent its legal position) states, "it is relatively clear that [section 3112(a)] is applicable to depleted uranium given that it states 'any uranium.' The examples of types of uranium are merely a listing and should not be interpreted as a limitation to the broader phrase, 'any uranium.'"

[10]See generally *Hearing before the Committee on Energy and Natural Resources on S. 755, a Bill to Amend the Atomic Energy Act of 1954 to Provide for the Privatization of the United States Enrichment Corporation*, S. Hrg. No. 104-105, at 5, 9 (June 13, 1995).

[11]*Secretary of Energy's Policy Statement on Management of the Department of Energy's Excess Uranium Inventory*, March 11, 2008, available at http://www.ne.doe.gov/newsroom/2008PRs/nePR031208.html (last visited March 20, 2008) *(2008 DOE Policy Statement)*, at 4.

such an approach might be reconciled as "consistent with" section 3112, as section 3112(a) requires, because none of the provisions in section 3112 specifies conditions of sale for depleted uranium. The 2005 DOE Memorandum makes a similar argument, pointing to the fact that the legislative history contains no explicit mention of restricting DOE's existing AEA authority to sell depleted uranium.[12]

We disagree with this interpretation. DOE in effect reads a depleted uranium exception into the unqualified term "any uranium," and rewrites section 3112 to say that only sale and transfer of uranium categories explicitly identified in that section are restricted. That is not what the statute says, and this reading would violate the principle that statutory exceptions are to be narrowly construed. See, e.g., *Commissioner v. Clark*, 489 U.S. 726, 738-39 (1989) ("Given that Congress has enacted a general rule . . ., we should not eviscerate that legislative judgment through an expansive reading of a somewhat ambiguous exception."). Nor does the legislative history support this result. The fact that there was no mention of limiting DOE's existing depleted uranium sales authority under the AEA is unremarkable, because in 1996, there was no valuable depleted uranium to sell.

Finally, it would not be consistent with section 3112 to allow DOE to sell depleted uranium under the AEA. It would violate the statute's prohibition against sales of "any uranium," because there are no section 3112 exceptions under which its sale is permitted. It would also be incongruous to allow DOE to sell or transfer potentially billions of dollars' worth of federal assets without the scrutiny Congress gave to disposition of DOE's valuable uranium in enacting section 3112. Section 3112 represents Congress' more specific and later-enacted intent regarding the types of factors to be considered in selling DOE's uranium inventories, including price, protection of the domestic uranium industry, and safeguarding the national security, and therefore takes precedence. See, e.g., *Smith v. Robinson*, 468 U.S. 992 (1984) (more specific and recent statute takes precedence).[13]

In sum, we believe our reading of section 3112 carries out the plain words of the act and respects the policy considerations and choices Congress made in 1996 when presented with the disposition of DOE's valuable uranium in a crowded and price-sensitive market. Our reading is also consistent with how courts interpret broad statutes when circumstances change: laws written in comprehensive terms apply to unanticipated circumstances if they reasonably fall within the scope of the plain language. See, e.g., *Unexcelled Chemical Corp. v. United States*, 345 U.S. 59 (1953). Thus, depleted uranium sales are covered by the prohibition in section 3112, even if depleted uranium was not part of the universe Congress explicitly had in mind when it enacted the statute in 1996.

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[12]The *2008 DOE Policy Statement* similarly asserts that DOE has "broad authority" under the AEA to "loan, sell, transfer or otherwise utilize" the department's depleted, natural and enriched uranium inventories, and that "[i]n exercising this authority, the Department must act *consistently* with other relevant statutory provisions, such as section 3112 . . . which imposes limitations on *certain* specified transactions." *Id.* at 1 (emphasis added).

[13]Section 3112(d) of the USEC Privatization Act authorizes DOE's sale of its natural and low-enriched uranium inventories only if it receives "not . . . less than fair market value," determines that the domestic uranium mining, conversion, and enrichment industry will not suffer adverse material impact from the sale, and obtains a determination by the President that the material is not needed for national security. By contrast, AEA section 161m authorizes sale of DOE's depleted uranium inventory to NRC licensees if there is "reasonable compensation to the government."

The same concerns that led Congress to legislate explicit conditions of sale for DOE's other uranium inventories in 1996 may apply equally with regard to sale of its depleted uranium inventory today. Congress now has the opportunity to address the intervening increase in uranium values and balance the competing concerns associated with its sale. Because the question of DOE's authority to sell its depleted tails would be a statutory construction issue of first impression and thus is not free from doubt, and because the question is an issue of significant public interest and importance, we recommend that Congress consider enacting legislation setting forth the explicit conditions (if any) under which DOE may sell or transfer its depleted uranium. Depending on the terms of such legislation, this could reap significant benefits for the government because of the potentially significant revenue that could be obtained. In any event, enacting explicit provisions regarding DOE's sale or transfer of its depleted uranium would provide stakeholders with welcome legal clarity and help avoid litigation that could interrupt DOE's efforts to obtain maximum value for the public.

Conclusion

In summary, we conclude that DOE has general authority under the Atomic Energy Act to re-enrich and then sell or transfer the tails, provided the transaction meets the conditions of section 3112 of the USEC Privatization Act. DOE also has general AEA authority to store the tails indefinitely. However, we believe that because of constraints on DOE's AEA authority in the USEC Privatization Act, the department's authority to sell or transfer tails in their current form is doubtful and that under rules of statutory construction, DOE likely lacks such authority under current law. We recommend that Congress consider enacting legislation explicitly addressing the scope of DOE's authority to sell and transfer depleted uranium.

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News Release

For Immediate Release:
June 4, 2001

Contact:
Elizabeth Stuckle (301) 564-3399
Charles Yulish (301) 564-3391

USEC Names Dennis Spurgeon as Executive Vice President and Chief Operating Officer

Bethesda, MD—USEC Inc. announced today that Dennis R. Spurgeon has joined the company as Executive Vice President and Chief Operating Officer. In that role, Spurgeon will be responsible for day-to-day activities of USEC's operations, including production activities together with Marketing and Sales.

"Dennis will make a tremendous addition to the USEC leadership team," said USEC President and CEO William H. Timbers. "His extensive nuclear background and record of success in commercial and governmental markets is an extremely complementary fit with our mission."

Before joining USEC, Spurgeon served as principal owner and chief executive officer with Swift Group LLC, an international leader in shipbuilding for commercial and military markets. His earlier career included executive leadership positions at UNC Resources (formerly United Nuclear Corporation) where as Chief Operating Officer some of his management responsibilities included operation of a uranium recovery facility, the manufacturing of reactor cores for the Navy and operation of the dual purpose "N" reactor. He previously held posts in the Ford administration including an assignment as Assistant Director for Fuel Cycle in the U.S. Energy Research and Development Administration and as a member of the White House task force that developed President Ford's nuclear policy. He also worked for the General Atomic Company, where he assisted in the development of nuclear reactor plants for electric power generation.

During a distinguished military career with the U.S. Navy, Spurgeon served aboard two submarines, was a ship superintendent in a naval shipyard and was assigned on loan to the Atomic Energy Commission as Technical Assistant to Commissioner "Tommy" Thompson and later Chairman Glenn Seaborg. He ultimately achieved the rank of Captain, USNR.

Spurgeon holds an MS in Nuclear Engineering and the degree of Nuclear Engineer from the Massachusetts Institute of Technology and a BS with distinction from the U.S. Naval Academy.

USEC Inc. (NYSE: USU), a global energy company, is the world's leading supplier of enriched uranium fuel for commercial nuclear power plants.

# # #

News Release

For Immediate Release:
October 22, 2003

Contact:
Charles Yulish (301) 564-3391
Steven Wingfield (301) 564-3354

USEC's Dennis Spurgeon to Retire

Bethesda, MD—Dennis Spurgeon, executive vice president and chief operating officer of USEC Inc. (NYSE: USU), has announced his decision to retire as of November 30, 2003.

Spurgeon has led USEC's successful effort to launch its next generation American Centrifuge program and was instrumental in improving the profitability of the Company's uranium enrichment business.

In making his announcement on the eve of his 60th birthday, Spurgeon noted that USEC's operations have been strengthened, the centrifuge development program is ahead of schedule and a strong management team is now in place to continue these efforts.

"I am proud to have launched the American Centrifuge program that will define uranium enrichment in the United States for the next 50 years and helped to put in place our cost-cutting program. With these foundations established, I will leave the Company in capable hands and I look forward to its successful future," Spurgeon said.

The Board of Directors and the entire management team are grateful for the many substantial contributions Spurgeon has made to USEC.

USEC Inc., a global energy company, is the world's leading supplier of enriched uranium fuel for commercial nuclear power plants.

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USEC Inc.

Two Democracy Center
6903 Rockledge Drive
Bethesda, Maryland 20817

NOTICE OF ANNUAL MEETING OF SHAREHOLDERS

To Be Held April 29, 2004

The Annual Meeting of Shareholders of USEC Inc. will be held on Thursday, April 29, 2004, at 10:00 a.m., local time, at the Capitol View Conference Center, 101 Constitution Avenue, N.W., 9th Floor, Washington, DC, for the purpose of considering and voting upon:

1. The election of eight directors for a term of one year;

2. The approval of the first amendment to and performance goals under the USEC Inc. 1999 Equity Incentive Plan;

3. The ratification of the appointment of PricewaterhouseCoopers LLP as USEC's independent auditors for 2004;

4. Two shareholder proposals; and

5. Such other business as may properly come before the meeting or any adjournments thereof.

We are enclosing a copy of the Company's Annual Report for the year ended December 31, 2003 with this Notice and Proxy Statement.

The record date for determining shareholders entitled to notice of, and to vote at, the meeting is the close of business March 5, 2004. Please complete and return the enclosed proxy card in the postage-paid envelope provided at your earliest convenience, or use telephone or Internet voting systems to vote your shares.

By Order of the Board of Directors,

Timothy B. Hansen
Senior Vice President, General Counsel and Secretary

Bethesda, Maryland

March 31, 2004

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Summary Compensation Table

The following table sets forth information regarding the compensation of the Chief Executive Officer, the four other most highly paid executive officers of the Company, and two other individuals that would have been included but for the fact that they were not serving as executive officers at December 31, 2003 (collectively, the "Named Executive Officers") for the year ended December 31, 2003, the six-month period ended December 31, 2002 and the two fiscal years ended June 30, 2002 and 2001.

		Annual Compensation		Long-Term Compensation			
Name and Principal Position	Fiscal Year	Salary ($)	Bonus(1) ($)	Restricted Stock Awards(2) ($)	Options (#)	LTIP Payouts(3) ($)	All Other Compensation(4) ($)
William H. Timbers	Calendar 2003	$ 660,000	$ 612,448	$ 329,768	188,571	—	$ 10,240
President and Chief	Six-Month Period Ended						
Executive Officer	December 31, 2002	330,000	296,550	216,770	376,068	—	5,030
	Fiscal 2002	660,000	782,263	447,142	244,400	—	8,750
	Fiscal 2001	600,000	381,610	381,599	—	—	8,540
Dennis R. Spurgeon (5)	Calendar 2003	422,714	357,723	—	111,693	517,227	5,748,022
Former Executive	Six-Month Period Ended						
Vice President and	December 31, 2002	200,000	65,088	151,211	216,524	—	32,733
Chief Operating Officer	Fiscal 2002	400,000	442,679	338,355	300,000	—	20,600
	Fiscal 2001	30,769	—	—	—	—	—
Henry Z Shelton, Jr. (6)	Calendar 2003	304,169	379,368	—	—	309,925	3,348,767
Former Senior Vice	Six-Month Period Ended						
President and Chief	December 31, 2002	144,500	108,580	70,770	115,271	—	7,225
Financial Officer	Fiscal 2002	289,000	227,616	128,281	72,000	—	13,410
	Fiscal 2001	265,000	120,093	120,088	—	—	13,533
Sydney M. Ferguson	Calendar 2003	295,769	175,973	127,053	75,428	—	13,373
Senior Vice President	Six-Month Period Ended						
	December 31, 2002	125,000	145,782	53,567	85,470	—	—
	Fiscal 2002	43,269	87,814	14,974	—	—	—
Philip G. Sewell	Calendar 2003	250,000	160,968	86,674	50,000	—	—
Senior Vice President	Six-Month Period Ended						
	December 31, 2002	125,000	73,515	49,666	90,142	—	—
	Fiscal 2002	226,000	187,317	105,504	59,300	—	—
	Fiscal 2001	213,514	103,315	103,300	—	—	—
Timothy B. Hansen	Calendar 2003	244,280	143,733	77,385	45,611	—	12,514
Senior Vice President,	Six-Month Period Ended						
General Counsel and	December 31, 2002	112,275	61,708	38,272	78,632	—	4,578
Secretary	Fiscal 2002	192,770	74,504	42,513	25,973	—	9,210
	Fiscal 2001	184,558	54,093	54,077	—	—	9,900
Robert Van Namen (7)	Calendar 2003	226,054	108,108	58,210	18,000	—	9,999
Senior Vice President	Six-Month Period Ended						
	December 31, 2002	113,027	41,260	35,713	36,000	—	4,999
	Fiscal 2002	217,360	101,162	57,051	36,000	—	9,515
	Fiscal 2001	208,600	98,972	32,989	—	—	10,140

(1) Includes amounts earned under the Company's Annual Incentive Program for the period indicated and paid in the following period.

(2) The amounts shown for restricted stock awards are the number of restricted shares granted multiplied by the market price of the Company's common stock on the date of grant.

As of December 31, 2003, Messrs. Timbers, Shelton, Ms. Ferguson, Messrs. Sewell, Hansen, and Van Namen held 25,630, 9,384, 8,710, 6,353, 5,333, and 4,845 shares of restricted stock, with values of $215,292, $78,826, $73,164, $53,365, $44,797, and $40,698, respectively, based on the market price of $8.40 per share for USEC's common stock on December 31, 2003.

Amounts for calendar 2003 include 40,965, 15,783, 10,767, 9,613, and 7,231 shares of restricted stock granted on February 10, 2004 to Mr. Timbers, Ms. Ferguson, Messrs. Sewell, Hansen, and Van Namen, respectively, which shares will vest one year from the date of grant.

Amounts for the six-month period ended December 31, 2002, include 25,630, 23,786, 9,384, 8,710, 6,353, 5,333, and 4,845 shares of restricted stock granted on February 14, 2003, to Messrs. Timbers, Spurgeon, Shelton, Ms. Ferguson, Messrs. Sewell, Hansen, and Van Namen, respectively, which shares vested on February 14, 2004, for Mr. Timbers, Ms. Ferguson, Messrs. Sewell, Hansen, and Van Namen and for Messrs. Spurgeon and Shelton, vested upon their retirement; and 8,547, 712, 1,887, 1,531, 791, and 855

Source: USEC INC, DEF 14A, March 31, 2004

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shares of restricted stock granted on November 6, 2002, to Messrs. Timbers, Spurgeon, Shelton, Sewell, Hansen, and Van Namen, respectively, which shares vested on November 6, 2003.

Amounts for fiscal 2002 include 60,002, 33,954, 17,458, 2,133, 14,367, 5,714, and 7,758 shares of restricted stock granted on August 7, 2002, to Messrs. Timbers, Spurgeon, Shelton, Ms. Ferguson, Messrs. Sewell, Hansen, and Van Namen, respectively, which shares vested on August 7, 2003; and 3,704, 818, 664, 343, and 370 shares of restricted stock granted on November 6, 2001, to Messrs. Timbers, Shelton, Sewell, Hansen, and Van Namen, respectively, which shares vested on November 6, 2002; and 12,658 shares of restricted stock granted on July 10, 2001, to Mr. Spurgeon, which shares vested upon retirement in November 2003.

Amounts for fiscal 2001 include 44,894, 14,128, 12,153, 6,362, and 3,881 shares of restricted stock granted on July 31, 2001, to Messrs. Timbers, Shelton, Sewell, Hansen, and Van Namen, respectively, which shares vested on July 31, 2002.

All shares of restricted stock vest upon the occurrence of a change of control of the Company. Holders of restricted stock are entitled to vote the shares and to receive dividends thereon from the date of the grant.

(3) Represents amounts earned in 2003 from payouts of performance-based awards of restricted stock units (RSU).

(4) For Mr. Timbers, amounts include Company contributions of $8,000, $4,000, $6,800, and $6,800 made under the Company's 401(k) plan and premiums of $2,240, $1,030, $1,950, and $1,740 paid by the Company for the term life component of split-dollar life insurance for calendar year 2003, the six-month period ended December 31, 2002, and for fiscal years 2002 and 2001, respectively. For Ms. Ferguson, Messrs. Hansen and Van Namen, amounts include Company contributions made under the Company's 401(k) plan, along with costs of supplemental 401(k) restoration benefits paid by the Company.

(5) Mr. Spurgeon retired in November 2003. Amount for 2003 includes costs of supplemental executive retirement benefits of $4,584,989, representing the amount the Company has accrued for a retirement annuity that is payable to Mr. Spurgeon by the Company, and severance benefits of $1,144,781, representing payments made to Mr. Spurgeon as a result of his retirement. In addition, amounts include Company contributions made under the Company's 401(k) plan, and costs of supplemental 401(k) restoration benefits paid by the Company.

(6) Mr. Shelton resigned as an executive officer in December 2003 and retired in January 2004. Amount in 2003 includes costs of supplemental executive retirement benefits of $3,240,000, of which $2,323,524 represents the lump sum paid in January 2004 and $916,476 represents the amount the Company has accrued for a retirement annuity payable to Mr. Shelton by the Company. Mr. Shelton also received $94,317 in lieu of his 2003 stock option award. In addition, amounts include Company contributions made under the Company's 401(k) plan, and costs of supplemental 401(k) restoration benefits paid by the Company.

(7) Mr. Van Namen was promoted to Senior Vice President in January 2004. Prior to January 2004, he served as Vice President, Marketing and Sales.

Source: USEC INC, DEF 14A, March 31, 2004

CONVERDYN

UF_6 in the US

- US utilities require ~14.5 M SWU annually which requires 19.6 M kgU UF_6 as feed
- US enrichment production is ~5 M SWU and requires 6.7 M kgU UF_6 feed
- ConverDyn supplies ~5 M kgU UF_6 to US utilities (26% of requirements)
- US utilities import ~14.6 M kgU UF_6 (74% of requirements)
- ConverDyn has the capacity to produce 15 M kgU UF_6. This could feed an 11 M SWU capacity enrichment facility.

All calculations based on 4.4% product assay and 0.25% tails assay.

Uranium Markets

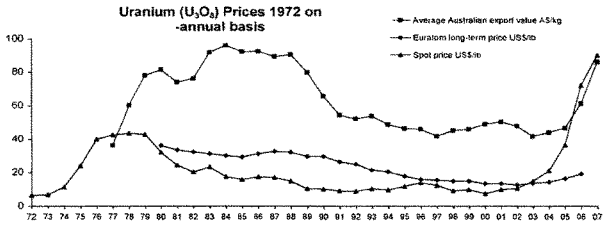
(*March 2008*)

- **Production from world uranium mines now supplies only 55% of the requirements of power utilities.**
- **Mine production is supplemented principally by ex-military material.**
- **World mine production needs to expand significantly.**

All mineral commodity markets tend to be cyclical, ie, prices rise and fall substantially over the years, but with these fluctuations superimposed on long-term decline in real prices. In the uranium market, very high prices in the late 1970s gave way to very low prices in the early 1990s, the spot prices being below the cost of production for most mines. In 1996 spot prices recovered to the point where most mines could produce profitably, though they then declined again and only started to recover strongly late in 2003.

"Spot prices" apply to marginal trading from day to day and usually represent less than 20% of supply. Most trade is 3-7 year term contracts with producers selling direct to utilities, but with the price often related to the spot price.

The reasons for fluctuation in mineral prices relate to demand, and perceptions of scarcity. The price cannot indefinitely stay below the cost of production (see below), nor will it remain at very high levels for longer than it takes for new producers to enter the market and anxiety about supply to subside.



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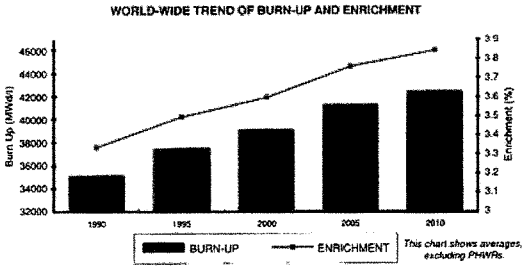
Demand

About 435 reactors with combined capacity of some 370 GWe, require 78,500 tonnes of uranium oxide concentrate containing 66,500 tonnes of uranium from mines (or the equivalent from stockpiles or secondary sources) each year. The capacity is growing slowly, and at the same time the reactors are being run more productively, with higher capacity factors, and reactor power levels. However, these factors increasing fuel demand are offset by a trend for increased efficiencies, so demand is dampened - over the 20 years from 1970 there was a 25% reduction in uranium demand per kWh output in Europe due to such improvements, which continue.

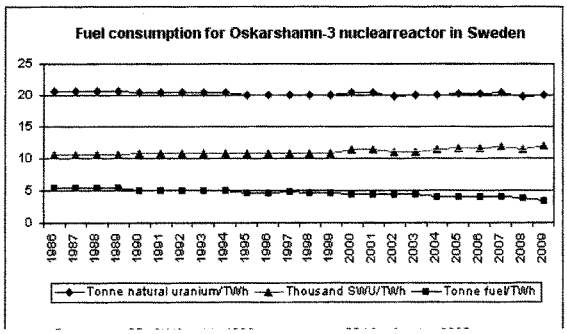
Each GWe of increased capacity will require about 195 tU/yr of extra mine production routinely, and three times this for the first fuel load.

Fuel burnup is measured in MW days per tonne U, and many utilities are increasing the initial enrichment of their fuel (eg from 3.3 to more than 4.0% U-235) and then burning it longer or harder to leave only 0.5% U-235 in it.



source: Uranium Institute 1992

The graph from Sweden's Oskarsamn-3 reactor shows that with increasing fuel burn-up from 35,000 to 55,000 MWd/t a constant amount of uranium is required per unit of electrical output, and energy used (indicated by SWU) for increased levels of enrichment increases slightly. However, the amount of fabricated fuel used in the reactor drops significantly due to its higher enrichment and burn-up.



In the USA, Exelon has also pursued higher enrichment and burnup, but in addition has reduced the tails assay from enrichment so that significantly less natural uranium feed is required. However, more energy input to enrichment is then needed.

Because of the cost structure of nuclear power generation, with high capital and low fuel costs, the demand for uranium fuel is much more predictable than with probably any other mineral commodity. Once reactors are built, it is very cost-effective to keep them running at high capacity and for utilities to make any adjustments to load trends by cutting back on fossil fuel use. Demand forecasts for uranium thus depend largely on installed and operable capacity, regardless of economic fluctuations. For instance, when South Korea's overall energy use decreased in 1997, nuclear energy output actually rose, to replace imported fossil fuels.

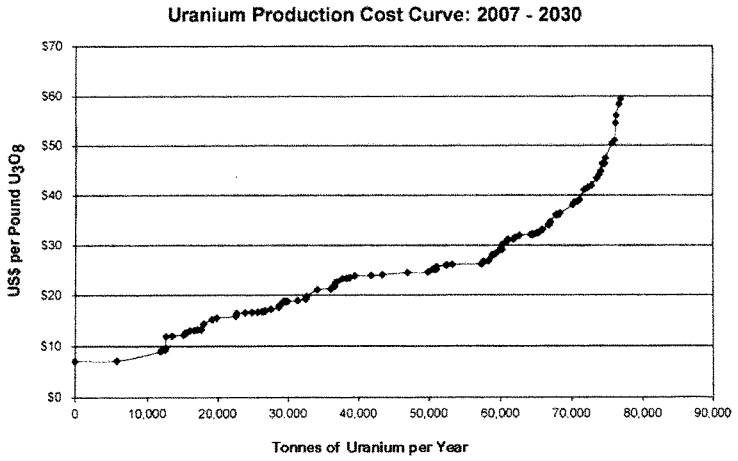
Looking ten years ahead, the market is expected to grow slightly. Demand thereafter will depend on new plant being built and the rate at which older plant is retired. Licensing of plant lifetime extensions and the economic attractiveness of continued operation of older reactors are critical factors in the medium-term uranium market. However, with electricity demand by 2030 expected (by the OECD's International Energy Agency) to double from that of 2004, there is plenty of scope for growth in nuclear capacity in a greenhouse-conscious world.

Supply

Mines in 2005 supplied some 49,000 tonnes of uranium oxide concentrate (U_3O_8) containing 41,600 tU, about 64% of utilities' annual requirements. (See also paper *World Uranium Mining*). The balance is made up from secondary sources or stockpiled uranium held by utilities, but those stockpiles are now largely depleted.

The perception of imminent scarcity drove the "spot price" for uncontracted sales to over US$ 100 per pound U_3O_8 in 2007 but it has settled back to $70-80 early in 2008. Most uranium however is supplied under long term contracts and the prices in new contracts has in the past reflected a premium above the spot market.

Note that at the prices which utilities are likely to be paying for current delivery, only one quarter of the cost of the fuel loaded into a nuclear reactor is the actual ex-mine (or other) supply. The balance is mostly the cost of enrichment and fuel fabrication.



The above graph, from International Nuclear Inc. as of end of 2007, shows a cost curve for world uranium producers, and suggests that for 40,000 tU/yr production from mines (approximately the present level) and up to 60,000 tU/yr, US$25-28/lb plus profit margin is a plausible price.

Supply from elsewhere

As well as existing and likely new mines, nuclear fuel supply may be from secondary sources including:

- recycled uranium and plutonium from spent fuel, as mixed oxide fuel,
- re-enriched depleted uranium tails,
- ex military weapons-grade uranium,
- civil stockpiles,
- ex military weapons-grade plutonium.

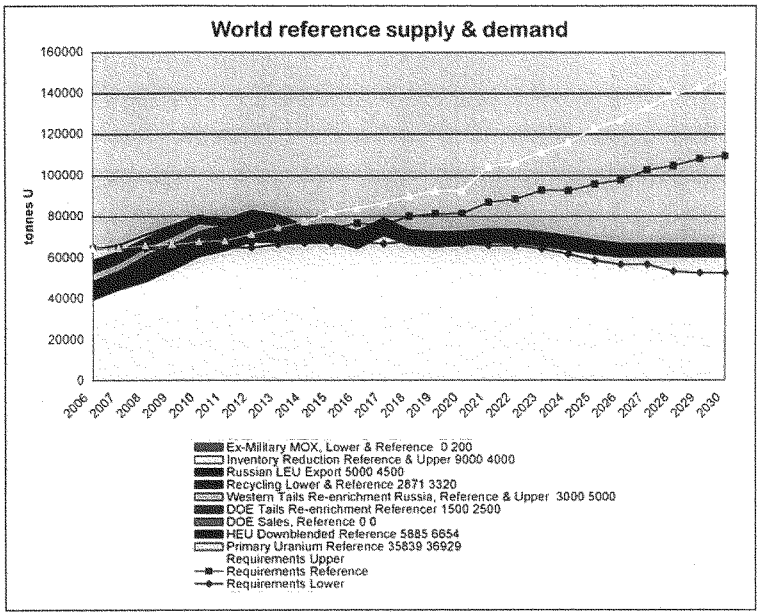
Major commercial reprocessing plants are operating in France and UK, with capacity of over 4000 tonnes of spent fuel per year. The product from these re-enters the fuel cycle and is fabricated into fresh mixed oxide (MOX) fuel elements. About 200 tonnes of MOX is used each year, equivalent to less than 2000 tonnes of U_3O_8 from mines.

Military uranium for weapons is enriched to much higher levels than that for the civil fuel cycle. Weapons-grade is about 97% U-235, and this can be diluted about 25:1 with depleted uranium (or 30:1 with enriched depleted uranium) to reduce it to about 4%, suitable for use in a reactor. From 1999 the dilution of 30 tonnes such material is displacing about 10,600 tonnes per year of mine production. (see also paper on Military Warheads as a source of Nuclear Fuel).

As a result of the 1994 "Megatons to Megawatts" agreement between USA and Russia, Russia owns a considerable amount of natural uranium which corresponds with the diluted high-enriched uranium it has supplied as described above since January 1997. In 1999 an agreement was signed which restrains this material from entering the market in the short term. Some other supply from Russian and other CIS stockpiles is possible in the short term.

The USA and Russia have agreed to dispose of 34 tones each of military plutonium by 2014. Most of it is likely to be used as feed for MOX plants, to make about 1500 tonnes of MOX fuel which will progressively be burned in civil reactors.

The following graph (WNA 2007 World reference scenario) suggests how these various sources of supply might look in the decades ahead:



The following graph gives an historical perspective, showing how early production went first into military inventories and then, in the early 1980s, into civil stockpiles. It is this early production which is now being released to the market.

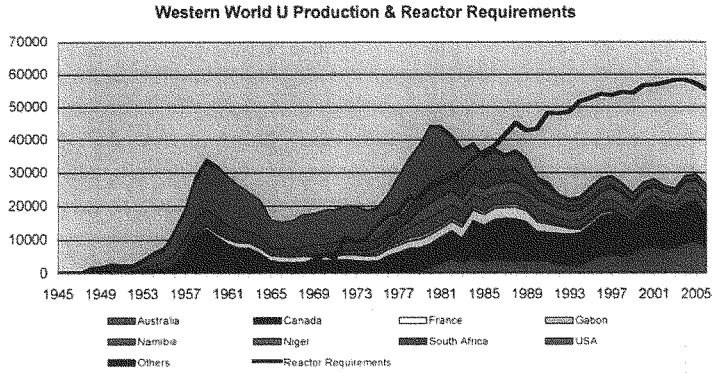


Table of the World's Nuclear Power Reactors and Uranium Requirements

Sources:
WNA 2007 Market Report (also earlier reports).
Bertel & Wilmer 2002, WNA Symposium paper.
IEA 2004 World Energy Outlook.

From: KILLAR, Felix [mailto:fmk@nei.org]
Sent: Wednesday, March 26, 2008 10:51 AM
To: PHELPS, Suzanne; rirwin@ameren.com; jwarner@ameren.com; mlbellville1@aep.com; amdoms@aep.com; tguo@aep.com; john.hazelbaker@aps.com; jeanne.m.shobert@constellation.com; philip.a.benavides@constellation.com; kielp@dteenergy.com; hink.barker@dom.com; kenneth.brown@dom.com; charles.blanton@dom.com; vicki.hull@dom.com; ttbresli@duke-energy.com; dcculp@duke-energy.com; tcgeer@duke-energy.com; kdchurch@duke-energy.com; racosta@epelectric.com; sgross@epelectric.com; frives@entergy.com; tober@entergy.com; lsmith8@entergy.com; robertc.lee@exeloncorp.com; james.malone@exeloncorp.com; anthony.wlezien@exeloncorp.com; james.nevling@exeloncorp.com; haksoo.kim@exeloncorp.com; gastont@firstenergycorp.com; bmathouravong@firstenergycorp.com; kakoski@firstenergycorp.com; rjborland@firstenergycorp.com; claude_villard@fpl.com; penny_quinn@fpl.com; mfbaumann@nmcco.com; don.orrock@nmcco.com; phanger@oppd.com; doug.semple@opg.com; crg1@pge.com; rmrose@pplweb.com; adyszel@pplweb.com; john.siphers@pgnmail.com; tom.dresser@pgnmail.com; frayne.ronkowski@pseg.com; doug.tisdel@pseg.com; dsummer1@pnm.com; molson@semprautilities.com; nsmith1@scana.com; owen.thomsen@sce.com; rgcocher@southernco.com; behunt@southernco.com; dfhoppes@stpegs.com; ajsanislo@tva.gov; takeys@tva.gov; bcoss@txu.com; jasammi@wcnoc.com; tmcgraw@nukeminc.com; donelsonj@usec.com; Jack Edlow; fecteamw@westinghouse.com; gary.fox@areva.com; pgoranson@mestenainc.com; jim.graham@converdyn.com; maria.katsva@uxc.com; kraemja@ffhsj.com; ron.land@areva.com; mmann@urencoinc.com; cheryl.moss.herman@uxc.com; ruthanne.neely@uxc.com; fletcher.newton@uranium1.com; cpugsley@athompsonlaw.com; dsloan@nukeminc.com; steyn@energyresources.com; Clint Williamson (LES); stucklee@usec.com; sewellp@usec.com; keith@usnrg.com; gene.clark@tradetech.com; treva.klingbiel@tradetech.com; ajthompson@athompsonlaw.com; jeff.combs@uxc.com; tom.hayslett@uxc.com; satoh.takashi@tepco.co.jp; hayashi@denjiren.com; audrey@taucherintl.com; eric@rockettscienceinc.com; steve_collings@cameco.com; john.o'neill@pillsburylaw.com; ao'gorman@anglogoldashanti.com; charles.scorer@nufcor.com; jfaul@nukeminc.com; dcollier@nacintl.com; jglasgow@morganlewis.com; gordon.epstein@mitsubishicorp.com; naoki.sugimoto@mitsubishicorp.com; jrl@longenecker-associates.com; witzconslt@aol.com; don.taylor@honeywell.com; dschramm@gnss-swu.com; tony.schillmoller@gnf.com; rob.wallace@ge.com; kraemja@ffhsj.com; aida@energyusainc.com; john_britt@cameco.com; scott_melbye@cameco.com; george_assie@cameco.com; ogurbuz@bechtel.com; francis.grandchamp@bkw-fmb.ch; michael.mcmurphy@areva.com; loren.maas@areva.com; joe.zwetloltz@areva.com; dana.brown@areva.com; jack@advocacy.com; energyfuels@aol.com; pm@energymetalscorp.com; tparker@hpur.com; wmmi@aol.com; byron_little@cameco.com; PHELPS, Suzanne; vannamenr@usec.com; michael.lepre@pillsburylaw.com; jcornell@nukeminc.com; schwartz@energyresources.com; rhochstein@intluranium.com; clark.beyer@riotinto.com; chris.frankland@riotinto.com; dustin.garrow@paladinresources.com.au; ruppresd@westinghouse.com; dianeharmon@msn.com; gbyers11@comcast.net; jonathan.hinze@uxc.com; sheila.harvey@pillsburylaw.com; Ross, James2 (GE Infra, Energy)
Subject: High Assay Depleted Tails

If high assay depleted tails material was made available would your company bid on it? Yes or No

Please respond by 4:00 pm today

3/30/2008

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----- Original Message -----
From: KILLAR, Felix <fmk@nei.org>
To: PHELPS, Suzanne <srp@nei.org>; rirwin@ameren.com <rirwin@ameren.com>; jwarner@ameren.com <jwarner@ameren.com>; mlbellville1@aep.com <mlbellville1@aep.com>; amdoms@aep.com <amdoms@aep.com>; tguo@aep.com <tguo@aep.com>; john.hazelbaker@aps.com <john.hazelbaker@aps.com>; jeanne.m.shobert@constellation.com <jeanne.m.shobert@constellation.com>; philip.a.benavides@constellation.com <philip.a.benavides@constellation.com>; kielp@dteenergy.com <kielp@dteenergy.com>; hink.barker@dom.com <hink.barker@dom.com>; kenneth.brown@dom.com <kenneth.brown@dom.com>; charles.blanton@dom.com <charles.blanton@dom.com>; vicki.hull@dom.com <vicki.hull@dom.com>; ttbresli@duke-energy.com <ttbresli@duke-energy.com>; dcculp@duke-energy.com <dcculp@duke-energy.com>; tcgeer@duke-energy.com <tcgeer@duke-energy.com>; kdchurch@duke-energy.com <kdchurch@duke-energy.com>; racosta@epelectric.com <racosta@epelectric.com>; sgross@epelectric.com <sgross@epelectric.com>; frives@entergy.com <frives@entergy.com>; tober@entergy.com <tober@entergy.com>; lsmith8@entergy.com <lsmith8@entergy.com>; robertc.lee@exeloncorp.com <robertc.lee@exeloncorp.com>; james.malone@exeloncorp.com <james.malone@exeloncorp.com>; anthony.wlezien@exeloncorp.com <anthony.wlezien@exeloncorp.com>; james.nevling@exeloncorp.com <james.nevling@exeloncorp.com>; haksoo.kim@exeloncorp.com <haksoo.kim@exeloncorp.com>; gastont@firstenergycorp.com <gastont@firstenergycorp.com>; bmathouravong@firstenergycorp.com <bmathouravong@firstenergycorp.com>; kakoski@firstenergycorp.com <kakoski@firstenergycorp.com>; rjborland@firstenergycorp.com <rjborland@firstenergycorp.com>; claude_villard@fpl.com <claude_villard@fpl.com>; penny_quinn@fpl.com <penny_quinn@fpl.com>; mfbaumann@nmcco.com <mfbaumann@nmcco.com>; don.orrock@nmcco.com <don.orrock@nmcco.com>; phanger@oppd.com <phanger@oppd.com>; doug.semple@opg.com <doug.semple@opg.com>; crg1@pge.com <crg1@pge.com>; rmrose@pplweb.com <rmrose@pplweb.com>; adyszel@pplweb.com <adyszel@pplweb.com>; john.siphers@pgnmail.com <john.siphers@pgnmail.com>; tom.dresser@pgnmail.com <tom.dresser@pgnmail.com>; frayne.ronkowski@pseg.com <frayne.ronkowski@pseg.com>; doug.tisdel@pseg.com <doug.tisdel@pseg.com>; dsummer1@pnm.com <dsummer1@pnm.com>; molson@semprautilities.com <molson@semprautilities.com>; nsmith1@scana.com <nsmith1@scana.com>; owen.thomsen@sce.com <owen.thomsen@sce.com>; rgcocher@southernco.com <rgcocher@southernco.com>; behunt@southernco.com <behunt@southernco.com>; dfhoppes@stpegs.com <dfhoppes@stpegs.com>; ajsanislo@tva.gov <ajsanislo@tva.gov>; takeys@tva.gov <takeys@tva.gov>; bcoss@txu.com <bcoss@txu.com>; jasammi@wcnoc.com <jasammi@wcnoc.com>; tmcgraw@nukeminc.com <tmcgraw@nukeminc.com>; donelsonj@usec.com <donelsonj@usec.com>; Jack Edlow <jedlow@edlow.com>; fecteamw@westinghouse.com <fecteamw@westinghouse.com>; gary.fox@areva.com <gary.fox@areva.com>; pgoranson@mestenainc.com <pgoranson@mestenainc.com>; jim.graham@converdyn.com <jim.graham@converdyn.com>; maria.katsva@uxc.com <maria.katsva@uxc.com>; kraemja@ffhsj.com <kraemja@ffhsj.com>; ron.land@areva.com <ron.land@areva.com>; mmann@urencoinc.com <mmann@urencoinc.com>; cheryl.moss.herman@uxc.com <cheryl.moss.herman@uxc.com>; ruthanne.neely@uxc.com <ruthanne.neely@uxc.com>; fletcher.newton@uranium1.com <fletcher.newton@uranium1.com>; cpugsley@athompsonlaw.com <cpugsley@athompsonlaw.com>; dsloan@nukeminc.com <dsloan@nukeminc.com>; steyn@energyresources.com <steyn@energyresources.com>; Clint Williamson (LES); stucklee@usec.com <stucklee@usec.com>; sewellp@usec.com <sewellp@usec.com>; keith@usnrg.com

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<jonathan.hinze@uxc.com>; sheila.harvey@pillsburylaw.com
<sheila.harvey@pillsburylaw.com>; Ross, James2 (GE Infra, Energy)
<james2.ross@ge.com>
Sent: Wed Mar 26 14:09:53 2008
Subject: Summary of Responses recieved on High-tail Assay

Thank you for the quick turn around.

Summary of Survey Responses

If high assay depleted tails material was made available would your company bid on it? Yes or No

	Utilities	Non-utilities
Total Responses	12	9
Yes	4	3
Maybe	2	1
No	6	5

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United States Government Accountability Office
Washington, DC 20548

B-309834

December 10, 2007

The Honorable David R. Hill
General Counsel
Department of Energy

Dear Mr. Hill:

At the request of the Senate Energy and Natural Resources Committee, the House Energy and Commerce Committee, and that committee's Subcommittee on Oversight and Investigations, GAO is currently reviewing factual, legal, and policy issues related to the Department of Energy's management alternatives for its inventory of excess depleted uranium hexafluoride tails—so-called "DUF6." As you know, DUF6 has historically been regarded as a liability. Consequently, we understand DOE has planned to convert the tails to a more stable form suitable for long-term storage, in preparation for future beneficial reuse or permanent disposal. However, recent increases in the price of natural uranium may have enhanced the economic feasibility of two management alternatives: (1) sale or other disposition of a portion of the tails "as is," in their current depleted form; or (2) sale or other disposition of a portion of the tails after they have been re-enriched to an assay equivalent to that of natural or low-enriched uranium. The purpose of this letter is to obtain DOE's views of its legal authority to implement these alternatives.

As discussed at a November 8, 2007 meeting with a number of DOE attorneys, possible authority for the Department to carry out these alternatives might derive from Section 3112 of the USEC Privatization Act, Section 314 of the 2006 Energy and Water Development Appropriations Act, and/or various provisions of the Atomic Energy Act. We would appreciate responses to the following questions (draft provided to DOE on October 31) regarding the Department's position on its authority for DUF6 activities under these or other laws. For each question, please identify and provide copies of any agency orders, guidelines, memoranda, correspondence, contracts, agreements, or other documents pertaining to the Department's response.

Applicability of USEC Privatization Act

1. A May 10, 2005 Action Memorandum for the DOE Deputy Secretary from the Administrator and Chief Executive Officer of the Bonneville Power

Administration and the DOE Principal Deputy Assistant Secretary for Environmental Management, regarding the Uranium Tails Pilot Project involving BPA, DOE's Office of Environmental Management, and Energy Northwest, states at page 2 that § 3112 of the USEC Privatization Act, 42 U.S.C. § 2297h-10, "does not apply to the transfers of . . . depleted uranium (tails)." A copy of this May 10, 2005 Memorandum ("BPA Action Memorandum") is enclosed, together with other contemporaneous DOE correspondence provided for context.

Please explain the basis of DOE's conclusion that § 3112 does not apply to transfers of depleted uranium. Does this represent DOE's current position? Would DOE's position change if the tails were re-enriched to natural or low-enriched levels? In determining whether transfers of depleted uranium are subject to § 3112, what, if any, significance should be attached to the fact that § 3113(a) contemplates depleted uranium sometimes constituting a waste and sometimes not constituting a waste?

2. Assuming that the phrase "any uranium" in § 3112(a) includes re-enriched DUF6, does DOE believe such materials are included in the DOE "stockpile" referenced in §§ 3112(c) and 3112(d)? If so, is there any reason why DOE transfers of re-enriched DUF6 to USEC or others could not meet the conditions of either §§ 3112(c) or 3112(d)?

Applicability of Section 314 of the 2006 Energy and Water Development Appropriations Act

3. At our November 8, 2007 meeting, DOE stated that Section 314 of the 2006 Energy and Water Development Appropriations Act is not permanent legislation and remains in force only because of the effect of Continuing Resolutions. Please confirm that this is DOE's position and briefly explain the basis for this position (*e.g.*, lack of so-called "words of futurity").

4. As long as Section 314 remains in force, does DOE believe this provision—which authorizes DOE to "barter, transfer or sell uranium . . . and to use any proceeds, without fiscal year limitation, to remediate uranium inventories" held by DOE—authorizes the Department to sell DUF6 and use the sale proceeds for re-enrichment, interpreting "remediation" as including re-enrichment?

Applicability of the Atomic Energy Act

AEA legal classification of DUF6

5. Section 11 of the Atomic Energy Act ("AEA"), 42 U.S.C. § 2014, classifies nuclear material in several ways, including as "source material" and "special nuclear material." How does DOE classify depleted DUF6 and re-enriched DUF6 under the AEA? Does the legal classification of re-enriched DUF6 depend on the ultimate assay of the tails?

AEA authority to transfer or dispose of DUF6 "as is"

6. The May 10, 2005 BPA Action Memorandum noted above states at page 2 that § 161m of the Atomic Energy Act, 42 U.S.C. § 2201(m), authorized DOE to transfer its depleted DUF6 to Energy Northwest as is, without enrichment. Please explain the basis of this conclusion. Does this represent DOE's current position?

7. Does DOE believe that AEA § 63, 42 U.S.C. § 2093, authorizes transfer of its depleted DUF6? What is the interplay, if any, between AEA §§ 63 and 161m? (Section 63 authorizes DOE to "distribute source material within the United States to qualified applicants," while § 161m authorizes DOE to "sell, lease, or otherwise make available . . . source or byproduct material.")

8. Does DOE believe that AEA § 161j, 42 U.S.C. § 2201(j), regarding the disposition of surplus radioactive materials, provides authority for DOE to transfer depleted DUF6 as is?

9. In DOE's view, what provision of law authorizes it to convert its DUF6 tails to U3O8 and to provide for their sale or disposal? Please explain.

AEA authority to re-enrich and transfer DUF6

10. Does DOE believe that AEA §§ 41, 161u, or any other AEA provision authorizes re-enrichment of DUF6 at the Paducah Gaseous Diffusion Plant? At any other enrichment facility that may come online in the future?

11. Does DOE believe AEA § 53 authorizes sale or transfer of its DUF6 re-enriched to natural or low-enriched levels? Please explain.

Additional Questions

12. Are there any other legal authorities DOE believes authorize it to sell, transfer, or otherwise dispose of its depleted DUF6 as is, or to re-enrich the DUF6 and sell or otherwise dispose of the resulting product?

13. As discussed at our November 8 meeting, an official at the Portsmouth and Paducah Project Office has asserted that 41 C.F.R. § 102-38.295, implementing the Federal Property and Administrative Services Act, authorizes DOE to retain proceeds from the sale of DUF6. Does DOE agree? Please explain.

14. Does DOE have any legal or other duty to ensure the continued existence of a domestic uranium enrichment capacity? For example, does DOE believe such a duty is created by USEC Privatization Act § 3112(d), which requires DOE, before it sells or transfers natural or low-enriched uranium from its stockpile, to consider the impact of these transactions on the domestic uranium mining, conversion, and enrichment industries?

Please provide DOE's responses to these questions no later than December 31, 2007, so that we may provide a timely response to the Congress. If you have any questions, please contact Assistant General Counsel Karen Keegan at (202) 512-8240.

Sincerely,

Susan D. Sawtelle
Managing Associate General Counsel

Enclosure

cc: Mary Egger, DOE/GC
Mary Neumayr, DOE/GC
Susan Beard, DOE/GC
Anita Capoferri, DOE/GC
Will Grant, DOE/GC
Marvin Shaw, DOE/GC

36610
Ryan Coles
5/29/05

Department of Energy

Bonneville Power Administration
Mail Drop 1399
P.O. Box 968
Richland, Washington 99352-0968

POWER BUSINESS LINE

May 26, 2005

In reply refer to: PGC/Richland

Letter of Agreement No. 05GS-75180

Mr. William Murphie, Manager
United States Department of Energy
Portsmouth/Paducah Project Office
1017 Majestic Drive, Suite 200
Lexington, KY 40513

Dear Mr. Murphie:

Bonneville Power Administration (BPA), an agency of the U.S. Department of Energy (DOE), in coordination with Energy Northwest (EN), a joint operating agency organized under Washington State law, and the Environmental Management Office (EM) of DOE have agreed to implement a PILOT project to determine the usability of a portion of DOE's depleted uranium hexafluoride (DUF_6) inventory. The DUF_6, as identified below, may contain enough uranium (U^{235}) for practical use in a nuclear power production reactor, after enrichment.

If successful, this interdepartmental PILOT project will result in the avoidance by EM of as much as approximately $40 million in disposal costs and save a projected $50 million in future nuclear fuel costs for EN's Columbia Generating Station, the generating project capacity of which BPA has heretofore acquired. In order to implement this PILOT project, EN, in coordination with BPA, will assume responsibility for funding the PILOT project (enrichment and uranium fees), estimated to cost approximately $88 million.

To commence the PILOT project work, and as consistent with interdepartmental property transfers, BPA requests delivery of DUF_6 from EM to BPA on the following basis:

1. DUF_6 cylinders from two DOE Lots will be delivered by EM on behalf of BPA to U.S. Uranium Enrichment Corporation (USEC) for the account of EN on a schedule mutually agreed upon by EM, EN, and USEC.

2. Lot 1 is defined as 165 Type 48G DUF_6 cylinders with a minimum assay between 0.400 to 0.4399 wt% U^{235} and containing approximately 1,405,620 KgU as DUF_6 located in Paducah, Kentucky.

3. Lot 2 is defined as 507 Type 48G DUF_6 cylinders with a minimum assay of 0.440 wt% U^{235} and containing approximately 4,314,400 KgU as DUF_6 located in Paducah, Kentucky.

Source: Linda Gunter, DOE
Prepare Document DOE USEC Agreement

4. Delivery of DUF_6 by EM on behalf of BPA will be to USEC's Paducah, Kentucky, Enrichment Plant (the "delivery point"). Upon delivery, title to, risk of loss and responsibility for the DUF_6 and the cylinders passes to EN.

5. EM will use good faith efforts to exchange any DUF_6 cylinders that are transferred to delivery point but not accepted for processing by USEC at the Paducah plant ("rejected cylinders") with a cylinder of equivalent assay. The rejected cylinder shall be returned to EM, and EM shall make all necessary arrangements to remove all rejected cylinders at EN's expense pursuant to paragraph 8 below. Title to, risk of loss, and responsibility for any cylinders so rejected will transfer back to EM upon EM's acceptance of the unprocessed cylinders from USEC.

6. Either BPA or EM, in its sole discretion, may terminate transfers of cylinders to the delivery point under this Agreement at any time. Such termination shall be in the form of written notice, shall state the nature and extent of termination, and shall be effective upon receipt unless a later date is specified. As promptly as practicable after such notice, EM shall undertake to accept from USEC any unprocessed cylinders affected by the termination notice from the delivery point. Custodial and administrative responsibility and title for any cylinders delivered and returned under this item 6 will transfer back to EM upon EM's acceptance of the unprocessed cylinders from USEC.

7. EM shall be reimbursed its cost of transferring each cylinder to the delivery point hereunder, at $2,200.00 (Two Thousand Two Hundred Dollars) per cylinder. Such payments shall be made to EM, or its designated agent, within thirty days of the date of invoicing. For each cylinder successfully processed under this PILOT project as provided herein, EM shall be paid a fixed fee of $10,450.00 (Ten Thousand Four Hundred and Fifty Dollars) per cylinder. Unless otherwise agreed to by the parties, such fixed fee shall be made to EM, or its designated agent, in cash, or in-kind to the extent permitted by law, as designated in writing by EM, within thirty days of the conclusion (whether by completion or termination) of the PILOT project. BPA is responsible for all payments to EM as it is for all cost items approved in EN's budget for the Columbia Generating Station, under BPA Contract No. 14-03-19121 (10-05-70), the "Project Agreement" for Columbia Generating Station. BPA anticipates that all payments, for which BPA bears ultimate financial responsibility, will be made by EN as its designate; such payments being made by EN through either short term lines of credit and/or municipal bonds that EN is authorized to issue.

8. For each cylinder that is returned to EM under item 5 or item 6, EM shall be paid $2,200.00 (Two Thousand Two Hundred Dollars) per cylinder, which shall be considered EM's full, complete, and total compensation per cylinder for cost incurred in connection with any and all such cylinders so returned. Payment of such transfer charge will be made to EM, or its designated agent within thirty days of the date of invoicing. Amounts not timely paid shall accrue interest pursuant to the terms provided in FAR 32.614-1.

9. BPA and EM intend to pursue the reuse of additional uranium inventories at the conclusion of the PILOT project on a schedule and terms to be mutually agreed upon. BPA has a significant financial stake in the PILOT project and if such project successfully meets the expectations of both parties, EM agrees to work with BPA to make additional quantities of DUF_6 available for reuse. BPA further agrees to make a good faith effort to assist EM in the reutilization of other surplus uranium.

10. EM MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY(A) OF MERCHANTABILITY; (B) OF FITNESS FOR A PARTICULAR PURPOSE; OR (C) THAT CYLINDERS OR MATERIAL DELIVERED BY IT WILL NOT RESULT IN INJURY OR DAMAGE WHEN USED FOR ANY PARTICULAR PURPOSES.

Please indicate your concurrence with this Agreement by executing one of the two included duplicate originals of this Agreement and returning one to me. The other duplicate original is of course for your files.

Sincerely,

Andrew J. Rapacz

Andrew J. Rapacz, Manager
Contract Generating Resources
Bonneville Power Administration

ACCEPTED

By _____
Manager, Portsmouth & Paducah Sites

Name WILLIAM E. MURPHIE
(Print/Type)

Date 31 MAY 2005

cc:
Mr. Scott W. Oxenford – Energy Northwest, PE04
Mr. Dale K. Atkinson – Energy Northwest, PE08
Ms. Pamela R. Bradley – Energy Northwest, PE08
Mr. Eric K. Rockett – Energy Northwest, PE26

RECEIVED MAY 31 2005

Department of Energy
Bonneville Power Administration
Mail Drop 1399
P.O. Box 968
Richland, Washington 99352-0968

POWER BUSINESS LINE

May 26, 2005

In reply refer to: PGC/Richland

Mr. W. S. Oxenford, Vice-President
Technical Services
Energy Northwest M/D PE04
P. O. Box 968
Richland, WA 99352-0968

Dear Mr. Oxenford:

As part of the Uranium Tailings Pilot Project, the US Department of Energy (DOE) and Energy Northwest (EN) have executed an agreement, Bonneville Power Administration ("BPA") Contract No. 05PB-11620 (Transfer Agreement), covering the delivery of cylinders containing depleted uranium hexafluoride (DUF_6) to the U.S. Enrichment Corporation (USEC) and the transfer of title to that cylinder to EN.

In order to document the treatment of specific cylinders, a Cylinder Transfer Acknowledgement (CTA) letter (enclosed), indicating acknowledgement of and acceptance by EN of specific cylinders, will be completed and executed by EN each time cylinders of DUF_6, supplied under the Letter of Agreement Number 05GS-75180 (LOA,) are accepted or rejected for processing by USEC under Contract No. 318588, and each time title to cylinders accepted by USEC transfers to EN.

Currently, the deliveries and acceptance of such cylinders are anticipated to occur approximately every 30 days. It is agreed, however, that regardless of whether such deliveries occur at less frequent or more frequent intervals, the CTA documenting the acknowledgment and acceptance of cylinders will be completed with all indicated information, including: (1) the numbers of any cylinders "rejected" for processing by USEC under Paragraphs 2 and 3 of the CTA; (2) the numbers of such cylinders "accepted" for processing by USEC under Paragraph 4 of the CTA; and (3) the numbers of such cylinders for which title has transferred.

As you are aware, the purpose of this CTA is to document the transfer of title and financial responsibility for such cylinders accepted or rejected by USEC, and the fact that DOE has no further financial, administrative, custodial, or legal obligations of any type with regard to the cylinders. This CTA contains an explicit provision to confirm our agreement that EN waives any claim against DOE and agrees to hold DOE harmless from, and indemnify DOE against, any third party claim (including claims from USEC) relating to any cylinder, and the material therein, that has been delivered to USEC pursuant to the Transfer Agreement. This indemnification, however, is not intended to nor shall it be construed to waive or otherwise affect: (1) the fees to

EM as are provided for in the Transfer Agreement, or (2) BPA's obligations to Energy Northwest contained in the WNP-2 (now called Columbia Generating Station) Project Agreement No. 14-03-19121 (10-05-70).

In a related matter, we are also asking for confirmation, by your signature below, that EN has included sufficient provisions in its Contract (No. 318588) with USEC to assure that DOE will not incur any costs in connection with that Contract or any related activities, except to the extent that the costs to EN may be reflected in its billing arrangements with BPA.

It is further agreed that one executed original copy of the enclosed "CTA" shall be completed in its entirety and copies routed to each of the addressees indicated below by first class mail within five business days of the USEC "acceptance" or "rejection" of cylinders for processing and the "transfer of title" previously described above.

Any addressee *may* change addresses or individuals specified below by providing written notice of such change to Energy Northwest, as well as the other addressees indicated below.

Please indicate your concurrence with the terms of this letter and the requirements of the CTA by signing the four originals of this letter and returning a copy to Mr. Murphie, Mr. McRae, and me. The fourth copy is for your records.

Sincerely,

Andrew J. Rapacz

Andrew J. Rapacz, Manager
Contract Generating Resources

CONCURRENCE
W. S. Oxenford – Vice President
Technical Services

Enclosure

cc: w/Enclosure

Mr. William Murphie, Manager
Portsmouth Paducah Projects
United States Department of Energy
Portsmouth/Paducah Project Office
1017 Majestic Drive, Suite 200
Lexington, KY 40513

Mr. James Bennett McRae, Asst General Counsel
for Civilian Nuclear Programs
GC-52/Forrestal Building
U.S. Department of Energy
1000 Independence Ave., S.W.
Washington, DC 20585

Enclosure

(ENERGY NORTHWEST LETTERHEAD)

Date

Mr. William Murphie, Manager
Portsmouth Paducah Projects
United States Department of Energy
Portsmouth/Paducah Project Office
1017 Majestic Drive, Suite 200
Lexington, KY 40513

Mr. Andrew J. Rapacz, Manager
Contract Generating Resources
Bonneville Power Administration
P O Box 968 – MD-1399
Richland, WA 99352-0968

Dear Messrs. Murphie and Rapacz:

1. Consistent with the Agreement between the U.S. Enrichment Corporation (USEC) and Energy Northwest (EN) USEC Contract No. EC-SC01-05UE03003 (also designated as Energy Northwest Contract No. 318588), (Agreement) USEC has previously received the records covering the cylinders recently delivered to USEC on or about _____, pursuant to Section 4.1 of the Agreement. As you will recall, the purpose of such records was to assist USEC in its preliminary determination of whether those cylinders were suitable for feeding into the Paducah Gaseous Diffusion Plant (PDGP). These records included, at minimum: (i) a list of the cylinders, identified by cylinder number, that EN proposes to deliver pursuant to Section 4.1 of the Agreement; (ii) a cylinder history card for each such cylinder, if available; and (iii) authorization for USEC to have access to the Nuclear Material Control and Accountability records of such cylinders.

2. Pursuant to Section 4.2 of the Agreement, USEC has (*or has not*) rejected cylinders based on its determination that the records of such cylinder(s) indicate that such cylinders may not be suitable for feeding at the PGDP. *Such cylinders so rejected are as follows: (List of Cylinders Numbers)*_____ _____

3. Pursuant to Section 4.2 of the Agreement, USEC has *(or has not)* rejected cylinders based upon its determination that such cylinder(s): do not meet ANSI Specification N14.1 "Packaging of Uranium Hexafluoride for Transport" (the "ANSI Specification"); and/or have been overfilled

with UF_6; and/or otherwise are not suitable for feeding. *Such cylinders so rejected are as follows: (List of Cylinders Numbers)*_____

4. Consistent with Paragraph 5 of the May ___, 2005, Agreement between the Department of Energy (DOE) and EN, BPA Contract No. 05PB-11620 (Transfer Agreement), the foregoing enumerated "rejected cylinders" are now being returned to the Environmental Management Office of DOE (EM), who shall make all necessary arrangements to remove the rejected cylinders at EN's cost as specified in Paragraph 5 below.

5. As provided for in the Transfer Agreement, EM (or its designated agent) shall be reimbursed by EN at the rate of $2,200.00 (Two Thousand Two Hundred Dollars) per cylinder, following transportation from USEC back to EM, and within 30 days of invoicing to EN for such cylinders so transported. This reimbursement is in addition to the reimbursement to EM by EN at the rate of $2,200.00 (Two Thousand Two Hundred Dollars) per cylinder for delivering the cylinder to USEC.

6. Pursuant to the Transfer Agreement, title to such cylinders as have now been transported to USEC, and which have not been rejected pursuant to Paragraph 2 or Paragraph 3 above, have been transferred to EN from DOE. The numbers of those cylinders are as follows:

_____

7. EN waives any claim against DOE and agrees to hold DOE harmless from, and indemnify DOE against, any third party claim (including claims from USEC) relating to any cylinder, and the material therein, that has been delivered to USEC pursuant to the Transfer Agreement. This indemnification, however, is not intended to nor shall it be construed to waive or otherwise affect BPA's obligations to EN contained in the WNP-2 (now called Columbia Generating Station) Project Agreement No. 14-03-19121 (10-05-70).

_____
Lisa Ferek
Group Lead – Fuel and Cycle Management, Fuel Design
Energy Northwest

cc:
James Bennett McRae
Asst. General Counsel for Civilian Nuclear Programs
GC-52/Forrestal Building
U.S. Department of Energy
1000 Independence Ave., S.W.
Washington, DC 20585

Department of Energy

Bonneville Power Administration
Mail Drop 1399
P.O. Box 968
Richland, Washington 99352-0968

POWER BUSINESS LINE

May 26, 2005

In reply refer to: PGC/Richland

Contract No. 05PB-11620
TRANSFER AGREEMENT

Mr. W. Scott Oxenford, Vice-President
Technical Services M/D PE04
Energy Northwest
P. O. Box 968
Richland, WA 99352-0968

Dear Mr. Oxenford:

As you are aware, the Bonneville Power Administration (BPA), an agency of the U.S. Department of Energy (DOE), in coordination with the Environmental Management Office (EM) of DOE, have agreed to implement a Uranium Tailings Pilot Project or UTPP (PILOT project), with Energy Northwest (EN) a joint operating agency organized under Washington State law, to determine the usability of a portion of DOE's depleted uranium hexafluoride (DUF_6) inventory for potential use as nuclear fuel in EN's Columbia Generating Station, a nuclear power production reactor. The DUF_6, as identified below, may contain enough uranium (U^{235}) for practical use as nuclear fuel, after enrichment.

If successful, this PILOT project will result in the avoidance by EM of as much as approximately $40 million in disposal costs and save as much as a projected $50 million in future nuclear fuel costs for EN's Columbia Generating Station, the generating project capacity of which BPA has heretofore acquired. To commence the PILOT project, two agreements are being executed contemporaneously with this Tailings Pilot Project Transfer Agreement (Transfer Agreement). Those separate agreements are: (1) BPA Letter of Agreement No. 05GS-75180 (between EM and BPA); and (2) Energy Northwest Contract No. 318588 (between EN and the U.S. Enrichment Corporation [USEC]).

This Transfer Agreement serves to confirm the terms under which title to the cylinders containing DUF_6 shall be transferred to EN, and moreover to explicitly provide that EN waives any claim against DOE and agrees to hold DOE harmless from, and indemnify DOE against, any third party claim (including claims from USEC) relating to any cylinder, and the material therein, that has been delivered to USEC pursuant to the Transfer Agreement. This indemnification, however, is not intended to nor shall it be construed to waive or otherwise affect

BPA's obligations to EN contained in the WNP-2 (now called Columbia Generating Station) Project Agreement No. 14-03-19121 (10-05-70).

DOE and EN, therefore agree as follows:

1. DUF_6 cylinders from two DOE Lots will be delivered by EM on behalf of BPA to U.S. Uranium Enrichment Corporation (USEC) for the account of EN, on a schedule mutually agreed upon by EM, EN, and USEC;

2. Lot 1 is defined as 165 Type 48G DUF_6 cylinders with a minimum assay between 0.400 to 0.4399 wt% U^{235} and containing approximately 1,405,620 KgU as DUF_6 located in Paducah, Kentucky;

3. Lot 2 is defined as 507 Type 48G DUF_6 cylinders with a minimum assay of 0.440 wt% U^{235} and containing approximately 4,314,400 KgU as DUF_6 located in Paducah, Kentucky;

4. Delivery of DUF6 by EM on behalf of BPA will be to USEC's Paducah, Kentucky, Enrichment Plant (the delivery point). Upon delivery, title to, risk of loss and responsibility for the DUF_6 and the cylinders passes to EN.

5. Any DUF_6 cylinders that are transferred to the delivery point but not accepted for processing by USEC at the Paducah plant (rejected cylinders) shall be exchanged with a cylinder of equivalent assay from DOE's current inventory, based upon DOE's good faith efforts. The "good faith efforts" of DOE to exchange such rejected cylinders with cylinders of equivalent assay shall be, however, DOE's sole obligation for rejected cylinders. EN waives all claims against DOE for failure of DOE to so provide cylinders of equivalent assay, and EN waives any claim against DOE and agrees to hold DOE harmless from, and indemnify DOE against, any third party claim (including claims from USEC) relating to any cylinder, and the material therein, that has been delivered to USEC pursuant to the Transfer Agreement. This indemnification, however, is not intended to nor shall it be construed to waive or otherwise affect BPA's obligations to EN contained in the WNP-2 (now called Columbia Generating Station) Project Agreement No. 14-03-19121 (10-05-70). EN's sole remedy for rejected cylinders is for DOE to use good faith efforts to replace the cylinders. The rejected cylinders shall be returned to EM, who shall make all necessary arrangements to remove the rejected cylinders at EN's cost as specified in paragraph 8 below. Title to, risk of loss, and responsibility for any cylinders so rejected will transfer back to EM upon EM's acceptance of the unprocessed cylinders from USEC.

6. DOE, in its sole discretion, may terminate transfers of cylinders to the delivery point under this Transfer Agreement at any time. Such termination shall be in the form of written notice from either BPA or EM, shall state the nature and extent of the termination, and shall be effective upon receipt unless a later date is specified in the termination notice. As promptly as practicable after such notice, EM shall undertake to accept from USEC any unprocessed

cylinders affected by any such termination notice from the delivery point. Custodial and administrative responsibility and title for any cylinders delivered and returned under this item 6 will transfer back to EM upon EM's acceptance of the unprocessed cylinders from USEC.

7. EN shall reimburse EM its cost of transferring each cylinder to the delivery point hereunder, at $2,200.00 (Two Thousand Two Hundred Dollars) per cylinder. Such payments shall be made to EM, or its designated agent, within thirty days of the date of invoicing. For each cylinder successfully processed under this PILOT project as provided herein, EN shall pay EM a fixed fee of $10,450.00 (Ten Thousand Four Hundred and Fifty Dollars) per cylinder. Unless otherwise agreed to by the parties, the fixed fee shall be paid to EM, or its designated agent, in cash, or in-kind to the extent permitted by law, as designated in writing by EM, within thirty days of the conclusion (whether by completion or termination) of the PILOT project.

8. For each cylinder that is returned to EM under item 5 or item 6, EN shall pay EM $2,200.00 (Two Thousand Two Hundred Dollars) per cylinder, which shall be considered EM's full, complete, and total compensation per cylinder for cost incurred in connection with any and all such cylinders so returned. Payment of such transfer charge will be made to EM, or its designated agent within thirty days of the date of invoicing. Amounts not timely paid shall accrue interest pursuant to the terms provided in FAR 32.614-1.

9. DOE is not responsible for any losses or costs incurred by EN under its agreement with USEC.

10. **DOE MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY (A) OF MERCHANTABILITY; (B) OF FITNESS FOR A PARTICULAR PURPOSE; OR (C) THAT CYLINDERS OR MATERIAL DELIVERED BY IT WILL NOT RESULT IN INJURY OR DAMAGE WHEN USED FOR ANY PURPOSE.**

Please indicate your concurrence with this Agreement by executing two of the three enclosed duplicate originals of this Transfer Agreement, returning one to Mr. William Murphie in Lexington, Kentucky, and one to me.

Sincerely,

Andrew J. Rapacz, Manager
Contract Generating Resources
Bonneville Power Administration

ACCEPTED

By _____
Vice-President – Technical Services

Name W. Scott Oxenford
(Print/Type)

Date 5/26/05

cc:
Mr. William Murphie, Manager
United States Department of Energy
Portsmouth/Paducah Project Office
1017 Majestic Drive, Suite 200
Lexington, KY 40513

Mr. Dale K. Atkinson – Energy Northwest, PE08
Ms. Pamela R. Bradley – Energy Northwest, PE13
Mr. Eric K. Rockett – Energy Northwest, PE26

Department of Energy

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

EXECUTIVE OFFICE

MAY 10 2005

MEMORANDUM FOR THE DEPUTY SECRETARY

THROUGH: DAVID K. GARMAN
ASSISTANT SECRETARY, ENERGY EFFICIENCY AND RENEWABLE ENERGY

FROM: STEPHEN J. WRIGHT
ADMINISTRATOR AND CHIEF EXECUTIVE OFFICER, BONNEVILLE POWER ADMINISTRATION

Charles E. Anderson
PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR ENVIRONMENTAL MANAGEMENT

SUBJECT: ACTION: Approve Uranium Tails Pilot Project involving Bonneville Power Administration, the Department of Energy Office of Environmental Management and Energy Northwest

ISSUE: The Bonneville Power Administration (BPA), in coordination with Energy Northwest (EN), has entered into discussions with the Office of Environmental Management (EM) regarding the potential for recycling two specific lots of uranium tails.

DISCUSSION: EN is a joint operating agency organized under Washington State law. Approximately eighteen months ago, EN approached BPA expressing an interest in engaging the Department of Energy (DOE) about recycling some of the DOE uranium tails for use in the Columbia Generating Station's (CGS) nuclear fuel cycle. BPA has acquired all of the generating capacity of CGS. These tails are depleted uranium hexafluoride (DUF_6) that were generated by DOE at the Portsmouth and Paducah Gaseous Diffusion Plant (GDP) sites. Over 700,000 metric tons (MT) of DUF_6 were generated during the fifty years that the government controlled the uranium enrichment enterprise, and the DUF_6 is currently in the custody of EM.

Subsequent discussions between EN and EM have identified the following areas of common interest:

- EM has an interest in re-using the tails in a Uranium Tails Pilot Project (Pilot Project), which, if successful, will reduce EM's obligations for conversion and disposal of tails and improve its planning ability by confirming such reuse is practical.

- EN has an interest in commercial enrichment of the tails for use in the CGS fuel cycle, provided that enrichment can be done in an economically viable manner to benefit CGS and BPA's ratepayers.

Consequently, a small-scale Pilot Project to assess the feasibility and benefits of commercial use of the DOE tails is proposed by BPA and EM. Enrichment of about 8,500 MT of DUF_6 produces enough equivalent natural UF_6 for about four fuel reloads (eight years) for CGS. This is estimated to provide a reduction in CGS future fuel costs of $50 million, based on current uranium prices, which otherwise would be recovered in BPA rates.

The Secretary has the statutory authority under section 161m of the Atomic Energy Act to approve the transfer of the depleted uranium. Section 3112 of the USEC Privatization Act, which restricts the sale or transfer of certain DOE natural and enriched uranium stockpiles, does not apply to the transfer of the depleted uranium (tails).

On April 1, 2005, BPA executed a categorical exclusion for this proposal which exempts it from further National Environmental Policy Act review based upon two regulatory provisions: 10 C.F.R. Part 1021, Subpart D, Appendix B3.6, which exempts, among other things, "small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions" and 10 C.F.R. Subpart D, Appendix A7, which exempts the "[t]ransfer, lease, disposition or acquisition of interests in personal property (e.g., equipment and materials) or real property (e.g., permanent structures and land), if the property use remains unchanged; i.e., the type and magnitude of impacts would remain essentially the same."

This Pilot Project is planned to commence when USEC begins with the enrichment of the first delivery of DUF_6 to USEC and is expected to end within two years of that date. Any decision by DOE to continue enrichment beyond the duration of the Pilot Project will be based upon appropriate NEPA review.

DOE's inventory of depleted uranium is surplus to defense needs and below commercial specification in the content of the isotope U^{235}. The domestic and international uranium industry is experiencing a resurgence that has witnessed the price of natural uranium more than double since 2003. The Office of Nuclear Energy, Science and Technology (NE) commissioned a market study to examine the impact upon the commercial uranium industry of the Pilot Project and other planned sales/transfers of the Department's uranium inventory, including down-blended Highly Enriched Uranium belonging to the National Nuclear Security Administration (NNSA). Based on this market study, NE prepared an analysis (attached) of the proposed depleted uranium transfer to BPA. NE has concluded that the Pilot Project combined with other known Department plans for placing uranium inventories into the commercial market will have insignificant impact on the domestic uranium mining, conversion, or enrichment industries. In fact, the inclusion of this material in the market is expected to increase the demand for enrichment services and should be beneficial to the enrichment industry.

Unless an innovative approach such as the one proposed herein is adopted, the fair market value of DOE's DUF_6 inventory is negative because DOE would otherwise pay for its disposition. The material is being transferred based on the negotiated value that represents a fair trade-off by each party of the expected cost savings/avoidance and risk, considering the fair market value. In addition, the Pilot Project would advance one of DOE's top priorities of "pursuing nuclear power and the resolution of nuclear waste disposal ... and environmental cleanup issues."

The Pilot Project will be memorialized through a Letter of Agreement (05GS-75180) signed on DOE's behalf by the Manager, Portsmouth Paducah Project Office (PPPO).

PPPO is the appropriate DOE office because it has been tasked with dispositioning DOE's entire tails inventory, and other uranium inventories stored at the DOE sites in Portsmouth and Paducah. Custodial and administrative responsibility for the DUF_6 shall pass, and delivery shall be deemed made from EM to BPA upon acceptance of the material for processing by the United States Enrichment Corporation (USEC) at the USEC Paducah Enrichment Plant. Title to the tails will pass to EN upon commencement of tails processing by USEC. EN will pay EM or its agent a nominal fee for the handling of the cylinders and a subsequent fee for any uranium that is successfully processed by USEC. Due to the Miscellaneous Receipts Act, DOE is precluded from retaining such fees, although DOE may retain fees in an amount equal to the direct costs and reasonably related indirect costs incurred by DOE to transfer the cylinders to EN. In spite of the limitation imposed by the Miscellaneous Receipts Act, the transaction will result in the disposition of DUF_6 with a net reduction in EM funding requirements estimated to be as much as approximately $40 million.

EN will enter into contractual agreements with USEC for the enrichment of the tails from 0.4 percent to 0.7 percent uranium 235 (U^{235}). Estimates for USEC's enrichment services and fees to EN are in the range of $88 million for the Pilot Project. EN will use a line of credit and bond financing to support the cash flows required for the Pilot Project.

In support of the Pilot Project the following actions are being completed:

- BPA has proposed an agreement (attached) with EM for the transfer of the uranium tails.

- EN is finalizing an enrichment contract with USEC for processing of the tails material. In the past, DOE and USEC have expended considerable time and resources to resolve disputes over contaminated cylinders. Agreement between EN and USEC should be clear that DOE will incur no cost obligation if USEC rejects a cylinder.

Following completion of the above actions, the transfer and enrichment of the uranium tails will begin. This Pilot Project is an opportunity to determine the feasibility of enriching depleted uranium and for all parties involved to gain financial benefits while accomplishing a reduction in the nation's depleted uranium tails inventory.

SENSITIVITIES: The reduction of DOE tails inventory may be viewed with concern by both the Kentucky and Ohio Congressional delegations because it reduces the inventory of feed for the DOE conversion facilities under construction in Portsmouth and Paducah. The reduction of inventory would reduce the operational life at these plants and thereby impact employment. Members of the Ohio and Kentucky delegations are likely to believe that if the Pilot Project is successful, DOE will expand it, thus further reducing inventory of feed for the new DOE conversion plants. This will be offset by the increased demand for enrichment services at Paducah and may be further neutralized by the fact that the resultant secondary tails will likely be processed at a DOE facility. Members of the New Mexico Congressional delegation may also view this proposed Pilot Project with great skepticism. Louisiana Energy Services (LES) is working to build a uranium enrichment facility in New Mexico with strong support from the community. The Congressional delegation may view the Pilot Project as benefiting USEC in the future at the expense of potential competition from LES.

Members of the Oregon, Washington, Idaho, and Montana delegations are likely to be highly appreciative of the $50 million benefit to ratepayers through BPA rates.

The uranium mining, conversion and enrichment industry is very concerned with the impact of DOE uranium inventories competing in the commercial uranium market. Although this Pilot Project will increase demand for enrichment at the Paducah GDP, there will be a slight reduction in demand for natural uranium. The House version of the Energy Bill as currently drafted, H.R. 6, would annually limit the "[t]otal amount of uranium transferred [by DOE] ... for consumption by commercial nuclear power end users." The amount of material

covered by the Pilot Project alone would be within the limit allowed for under H.R. 6.

If it becomes law, H.R. 6 would limit federal transfers of uranium to three million pounds of U3O8 equivalent per year for the period FY 2005-09. Other planned sales or transfers in combination with the Pilot Project could exceed the annual limit for uranium transfers set forth in H.R. 6. Specifically, a proposed sale of low-enriched uranium derived from 17 MT of highly-enriched uranium (HEU) by NNSA: 0 M lbs in 2005; 2.3 M lbs in 2006; 3.0 M lbs in 2007 and 2.3 M lbs in 2008. BPA will work with EM, EN and USEC to accelerate planned 2005 transfers under the Pilot Project toward the 3.0 M lbs limit, and to have part of the DUF_6 Pilot Project deferred starting in FY 2006, if necessary. BPA will consult and coordinate on a continuing basis with NNSA to adjust BPA transfers during the two year term of the Pilot Project so as not to conflict with actual NNSA transfers should a uranium transfer limit, such as the one set forth in H.R. 6, be enacted. However, members of the Senate and House Armed Service Committees are likely to express concerns that the Pilot Project will negatively affect the ability of NNSA to transfer uranium if the H.R. 6 limit on uranium transfers is signed into law.

If approved, DOE should enter into discussions with the uranium mining industry to assure them that DOE will remain sensitive to the price of uranium and ensure that DOE's huge tails inventory will be managed to avoid any impact to market prices. Unfortunately, the price may continue to rise or drop independent of any DOE action, but the industry may blame DOE for any price drop. Members of the Nebraska and Wyoming Congressional delegations (where uranium mining still occurs) are likely to strongly oppose the Pilot Project.

If the Pilot Project is successful, the Tennessee Valley Authority may propose a similar arrangement to transfer DUF6 to support their needs connected to tritium production and the requirement for U.S. origin uranium (foreign source uranium is generally restricted by agreement to non-defense purposes).

POLICY IMPACT: None

RECOMMENDATION: Approve the Pilot Project Agreement (Attachment 1) based on the market analysis (Attachment 2) that has concluded there is insignificant impact to the domestic nuclear fuel supply industry.

Approval: _____

CONCURRENCE:	Chief Financial Officer/ME-1	S/	5/16/05
	Nuclear Energy/NE-1	S/	5/16/05
	General Counsel/GC-1	S/	5/16/05
	National Nuclear Security/NA-1	S/	5/16/05
	Congressional Affairs/CI-1	S/	5/16/05

2 Attachments

cc: I. Kolb - S-1
L. Brown - S-3
K. Kolevar - TD-1
E. Nicoll - CI-20
W. Murphie - PPPO
S. Wright - BPA

United States Government Accountability Office
Washington, DC 20548

B-309834

January 11, 2008

Mr. Eric J. Fygi
Deputy General Counsel
U.S. Department of Energy

Dear Mr. Fygi:

Thank you for your letter of December 21, 2007, responding to our December 10 request for the Department's legal position on its authority to manage its depleted uranium inventory.

As the Department has elected not to state its legal position, pursuant to 31 U.S.C. § 716, GAO hereby requests the following documents:

1. Any memoranda, correspondence, notes, files, research, orders, analyses, guidelines or other documents prepared, reviewed, or considered in making the statements regarding the Atomic Energy Act and the USEC Privatization Act on page 2 of the Department's May 10, 2005 memorandum referenced on pages 1-2 of our December 10 letter.[1] Page 7 of the Department's 2005 memorandum indicates that the Office of General Counsel concurred in the memorandum.

2. The written criteria DOE has developed, as required by section 63c of the Atomic Energy Act, to determine whether a charge is made for source material licensed and distributed under section 63a the Atomic Energy Act, and any guidelines related to these criteria.

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[1] See May 10, 2005 Memorandum for the DOE Deputy Secretary from the DOE Principal Deputy Assistant Secretary for Environmental Management and the Administrator and Chief Executive Officer of the Bonneville Power Administration re: "ACTION: Approve Uranium Tails Pilot Project involving Bonneville Power Administration, the Department of Energy Office of Environmental Management and Energy Northwest," at p. 2 ("The Secretary has the statutory authority under section 161m of the Atomic Energy Act to approve the transfer of . . . depleted uranium.. Section 3112 of the USEC Privatization Act, which restricts the sale or transfer of certain DOE natural and enriched uranium stockpiles, does not apply to . . . transfer of . . . depleted uranium (tails).").

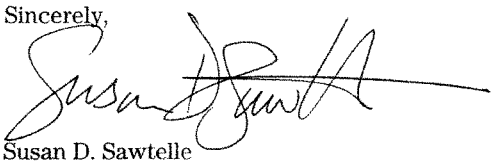
3. Any memoranda, correspondence, notes, files, research, orders, analyses, guidelines or other documents discussing, reflecting, or relating to DOE's legal authority to sell or otherwise transfer depleted uranium either to other government agencies or to non-government entities.

4. Any memoranda, correspondence, notes, files, research, orders, analyses, guidelines or other documents discussing, reflecting, or relating to DOE's legal authority to re-enrich its depleted uranium inventory through a contractual arrangement or otherwise, and its legal authority to sell or otherwise transfer the product of such re-enrichment.

5. Any memoranda, correspondence, notes, files, research, orders, analyses, guidelines or other documents discussing, reflecting, or relating to the continuing availability to DOE of the authority in section 314 of the Energy and Water Development Appropriations Act, 2006 to barter, transfer, or sell uranium, or to whether re-enrichment of depleted uranium would constitute "remediation" under this section.

We would appreciate the Department's response no later than January 25, 2008. To arrange for delivery of these documents, please contact Assistant General Counsel Karen Keegan at (202) 512-8240. Thank you for your cooperation.

Sincerely,



Susan D. Sawtelle
Managing Associate General Counsel

Department of Energy
Washington, DC 20585

January 25, 2008

Ms. Susan D. Sawtelle
Managing Associate General Counsel
United States Government Accountability Office
Washington, D.C. 20548

Dear Ms. Sawtelle:

This responds to your January 11, 2008 letter requesting documents relating to the Department's legal authorities to manage its depleted uranium inventory. The following responses reflect the numbered categories contained in your letter.

1. We have identified the following responsive document:
   - March 16, 2005 Memorandum from Marvin Shaw to Ben McRae

2. We have not yet identified any responsive documents.

3. We have identified the following responsive document:
   - May 10, 2005 Memorandum from Stephen J. Wright to the Deputy Secretary

4. We have not yet identified any responsive documents. We note this issue did not arise in the BPA transaction because the transaction only involved the transfer of depleted uranium and involved no re-enrichment by or for the Department.

5. We have identified the following responsive documents relating to the continuing availability to the Department of the authority in section 314 of the Energy and Water Development Appropriations Act, 2006:
   - December 16, 2005 e-mail from Susan Beard to David Krentel
   - March 1, 2006 e-mail from William Grant to Mary Egger and Susan Beard
   - May 30, 2007 e-mail from William Grant to David R. Hill, Susan Beard and Mary Egger

   We have not yet identified any documents relating to the question whether re-enrichment of depleted uranium would constitute "remediation" under section 314 of the Energy and Water Development Appropriations Act, 2006.

Printed with soy ink on recycled paper

We are continuing to search for responsive documents and will provide them to you as promptly as circumstances permit. If you have any questions, please call me at (202) 586-5281.

Sincerely,

Eric J. Fygi
Deputy General Counsel

Enclosures

TO: Ben McRae
Assistant General Counsel for Civilian Nuclear Programs
FROM: Marvin L. Shaw
Attorney-Advisor
DATE: March 16, 2005

SUBJECT: Legal Review of Uranium Tails Pilot Project involving Bonneville Power Administration (BPA), the Department of Energy (DOE) Office of Environmental Management (EM) and Energy Northwest (EN)

FACTS: Energy Northwest (EN) approached the Bonneville Power Administration (BPA) about engaging the Department of Energy (DOE) in recycling DOE uranium tails for use in the Columbia Generating Station's (CGS) nuclear fuel cycle. These tails are depleted uranium hexafluoride (UF6) that was generated at the Portsmouth and Paducah Gaseous Diffusion Plant (GDP) sites. DOE's Office of Environmental Management (EM) has expressed favorable interest in establishing a Pilot Program, which would reduce its obligations for conversion and disposal of the tails.

ISSUE: The Secretary's office informally requested the Office of General Counsel (OGC) to determine DOE has the statutory authority to support the proposed Pilot Project in which DOE would transfer depleted uranium hexafluoride tails to Energy Northwest/Bonneville Power Administration.

BRIEF ANSWER: The statutory provisions addressing Departmental authority do not specifically address the transfer of depleted uranium hexafluoride tails. Section 3112 of the USEC Privatization Act, the provision most directly related to the sale or transfer of uranium, does not directly address the transfer of such depleted uranium. Nevertheless, a reasonable argument can be made that the Department has the authority to facilitate such transfers of depleted uranium under the general authority of Atomic Energy Act, particularly sections 161m and 82.

DISCUSSION: The transfer of uranium is addressed in the USEC Privatization Act. Specifically, section 3112(a) states that "the Secretary shall not provide enrichment services or transfer or sell any uranium (including natural uranium concentrates, natural uranium hexafluoride, or enriched uranium in any form) to any person except as consistent with this section."

As a threshold question, internal DOE discussion has raised concerns about whether depleted uranium hexafluoride of the type contemplated in the DOE/BPA/EN transfer is covered by this section. Subsection (a) lists several examples of uranium to be covered by this section including natural uranium concentrates, natural uranium hexafluoride, any enriched uranium in any form. Section 3112(a) does not list depleted uranium hexafluoride as an example. Nevertheless, it is relatively clear that this provision is applicable to depleted uranium given that it states "any uranium." The examples of types of uranium are merely a listing and should not be interpreted as a limitation to the broader phrase "any uranium."

Section 3112(a) further specifies that any sale or transfer is prohibited unless it is "consistent with this section." To determine whether such a transfer is consistent with section 3112, it is necessary to review section 3112's other subsections. Section 3112 sets forth four categories of sales or transfers, including sales or transfers involving Russian HEU in subsection b, the United States Enrichment Corporation (USEC) in subsection c, inventory sales in subsection d, and government transfers in subsection e. None of these categories of transfers appear relevant to the type of transaction contemplated in the DOE/BPA/EN Pilot Project. It is clear that neither the Russian HEU nor USEC provisions are applicable. Similarly, the inventory sales provision is inapplicable because it applies to the sale of natural or low-enriched uranium from DOE's stockpile. The government transfers provision is also inapplicable because it applies to "enriched uranium."

Even though section 3112 does not appear to be directly applicable to the DOE/BPA transfer of depleted uranium, this situation may be interpreted in one of two ways. The first interpretation would be that subparts (b) through (e) serve as a limitation to subsection (a). Under that interpretation sales or transfers would only be permitted if they fell squarely into one of these categories. The second interpretation would be that nothing in section 3112 is intended to limit or prevent the exercise of DOE's broader authority to facilitate the sale or transfer of uranium under the Atomic Energy Act, particularly the General Authority provisions in section 161m of that Act. That provision states

> the Commission is authorized to...enter into agreements with persons licensed under section(s)...[of the Act] (1) to provide for the processing, fabricating, separating, or refining in facilities owned by the Commission of source, byproduct, or other material or special nuclear material owned by or made available to such licensees and which is utilized or produced in the conduct of the licensed activity, and (2) to sell, lease, or otherwise make available to such licensees such quantities of source or byproduct material...

Support for this second interpretation may be found from the legislative history to the USEC Privatization Act. I found nothing in that legislative history intended to limit the general authority related to the transfer of depleted uranium. Rather, the Senate Report stated that "the administration sought legislative direction for the transfer of specified amounts of surplus enriched uranium and uranium hexafluoride feed material." Senate Report 104-173 USEC Privatization Act, November 16, 1995 at page 14 (see also pages 28-29). Most of the discussion related to the transfer of uranium involved the US-Russian HEU Agreement and the discussion of the other subparts merely restate the statutory language. The only reference to uranium hexafluoride tails was in the disposal of such material as low level waste from enrichment activities. It is reasonable to conclude that any legislative intent to curtail the Department's general authority to facilitate the sale or transfer of nuclear material would have been expressly discussed in the Privatization Act, given the purpose of that Act is to enhance the uranium enrichment industry.

Department of Energy

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

EXECUTIVE OFFICE

MAY 10 2005

MEMORANDUM FOR THE DEPUTY SECRETARY

THROUGH: DAVID K. GARMAN
ASSISTANT SECRETARY, ENERGY EFFICIENCY AND RENEWABLE ENERGY

FROM: STEPHEN J. WRIGHT
ADMINISTRATOR AND CHIEF EXECUTIVE OFFICER, BONNEVILLE POWER ADMINISTRATION

Charles E. Anderson
PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR ENVIRONMENTAL MANAGEMENT

SUBJECT: ACTION: Approve Uranium Tails Pilot Project involving Bonneville Power Administration, the Department of Energy Office of Environmental Management and Energy Northwest

ISSUE: The Bonneville Power Administration (BPA), in coordination with Energy Northwest (EN), has entered into discussions with the Office of Environmental Management (EM) regarding the potential for recycling two specific lots of uranium tails.

DISCUSSION: EN is a joint operating agency organized under Washington State law. Approximately eighteen months ago, EN approached BPA expressing an interest in engaging the Department of Energy (DOE) about recycling some of the DOE uranium tails for use in the Columbia Generating Station's (CGS) nuclear fuel cycle. BPA has acquired all of the generating capacity of CGS. These tails are depleted uranium hexafluoride (DUF_6) that were generated by DOE at the Portsmouth and Paducah Gaseous Diffusion Plant (GDP) sites. Over 700,000 metric tons (MT) of DUF_6 were generated during the fifty years that the government controlled the uranium enrichment enterprise, and the DUF_6 is currently in the custody of EM.

Subsequent discussions between EN and EM have identified the following areas of common interest:

- EM has an interest in re-using the tails in a Uranium Tails Pilot Project (Pilot Project), which, if successful, will reduce EM's obligations for conversion and disposal of tails and improve its planning ability by confirming such reuse is practical.

- EN has an interest in commercial enrichment of the tails for use in the CGS fuel cycle, provided that enrichment can be done in an economically viable manner to benefit CGS and BPA's ratepayers.

Consequently, a small-scale Pilot Project to assess the feasibility and benefits of commercial use of the DOE tails is proposed by BPA and EM. Enrichment of about 8,500 MT of DUF_6 produces enough equivalent natural UF_6 for about four fuel reloads (eight years) for CGS. This is estimated to provide a reduction in CGS future fuel costs of $50 million, based on current uranium prices, which otherwise would be recovered in BPA rates.

The Secretary has the statutory authority under section 161m of the Atomic Energy Act to approve the transfer of the depleted uranium. Section 3112 of the USEC Privatization Act, which restricts the sale or transfer of certain DOE natural and enriched uranium stockpiles, does not apply to the transfer of the depleted uranium (tails).

On April 1, 2005, BPA executed a categorical exclusion for this proposal which exempts it from further National Environmental Policy Act review based upon two regulatory provisions: 10 C.F.R. Part 1021, Subpart D, Appendix B3.6, which exempts, among other things, "small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions" and 10 C.F.R. Subpart D, Appendix A7, which exempts the "[t]ransfer, lease, disposition or acquisition of interests in personal property (e.g., equipment and materials) or real property (e.g., permanent structures and land), if the property use remains unchanged; i.e., the type and magnitude of impacts would remain essentially the same."

This Pilot Project is planned to commence when USEC begins with the enrichment of the first delivery of DUF_6 to USEC and is expected to end within two years of that date. Any decision by DOE to continue enrichment beyond the duration of the Pilot Project will be based upon appropriate NEPA review.

DOE's inventory of depleted uranium is surplus to defense needs and below commercial specification in the content of the isotope U^{235}. The domestic and international uranium industry is experiencing a resurgence that has witnessed the price of natural uranium more than double since 2003. The Office of Nuclear Energy, Science and Technology (NE) commissioned a market study to examine the impact upon the commercial uranium industry of the Pilot Project and other planned sales/transfers of the Department's uranium inventory, including down-blended Highly Enriched Uranium belonging to the National Nuclear Security Administration (NNSA). Based on this market study, NE prepared an analysis (attached) of the proposed depleted uranium transfer to BPA. NE has concluded that the Pilot Project combined with other known Department plans for placing uranium inventories into the commercial market will have insignificant impact on the domestic uranium mining, conversion, or enrichment industries. In fact, the inclusion of this material in the market is expected to increase the demand for enrichment services and should be beneficial to the enrichment industry.

Unless an innovative approach such as the one proposed herein is adopted, the fair market value of DOE's DUF_6 inventory is negative because DOE would otherwise pay for its disposition. The material is being transferred based on the negotiated value that represents a fair trade-off by each party of the expected cost savings/avoidance and risk, considering the fair market value. In addition, the Pilot Project would advance one of DOE's top priorities of "pursuing nuclear power and the resolution of nuclear waste disposal ... and environmental cleanup issues."

The Pilot Project will be memorialized through a Letter of Agreement (05GS-75180) signed on DOE's behalf by the Manager, Portsmouth Paducah Project Office (PPPO).

PPPO is the appropriate DOE office because it has been tasked with dispositioning DOE's entire tails inventory, and other uranium inventories stored at the DOE sites in Portsmouth and Paducah. Custodial and administrative responsibility for the DUF_6 shall pass, and delivery shall be deemed made from EM to BPA upon acceptance of the material for processing by the United States Enrichment Corporation (USEC) at the USEC Paducah Enrichment Plant. Title to the tails will pass to EN upon commencement of tails processing by USEC. EN will pay EM or its agent a nominal fee for the handling of the cylinders and a subsequent fee for any uranium that is successfully processed by USEC. Due to the Miscellaneous Receipts Act, DOE is precluded from retaining such fees, although DOE may retain fees in an amount equal to the direct costs and reasonably related indirect costs incurred by DOE to transfer the cylinders to EN. In spite of the limitation imposed by the Miscellaneous Receipts Act, the transaction will result in the disposition of DUF_6 with a net reduction in EM funding requirements estimated to be as much as approximately $40 million.

EN will enter into contractual agreements with USEC for the enrichment of the tails from 0.4 percent to 0.7 percent uranium 235 (U^{235}). Estimates for USEC's enrichment services and fees to EN are in the range of $88 million for the Pilot Project. EN will use a line of credit and bond financing to support the cash flows required for the Pilot Project.

In support of the Pilot Project the following actions are being completed:

- BPA has proposed an agreement (attached) with EM for the transfer of the uranium tails.

- EN is finalizing an enrichment contract with USEC for processing of the tails material. In the past, DOE and USEC have expended considerable time and resources to resolve disputes over contaminated cylinders. Agreement between EN and USEC should be clear that DOE will incur no cost obligation if USEC rejects a cylinder.

Following completion of the above actions, the transfer and enrichment of the uranium tails will begin. This Pilot Project is an opportunity to determine the feasibility of enriching depleted uranium and for all parties involved to gain financial benefits while accomplishing a reduction in the nation's depleted uranium tails inventory.

SENSITIVITIES: The reduction of DOE tails inventory may be viewed with concern by both the Kentucky and Ohio Congressional delegations because it reduces the inventory of feed for the DOE conversion facilities under construction in Portsmouth and Paducah. The reduction of inventory would reduce the operational life at these plants and thereby impact employment. Members of the Ohio and Kentucky delegations are likely to believe that if the Pilot Project is successful, DOE will expand it, thus further reducing inventory of feed for the new DOE conversion plants. This will be offset by the increased demand for enrichment services at Paducah and may be further neutralized by the fact that the resultant secondary tails will likely be processed at a DOE facility. Members of the New Mexico Congressional delegation may also view this proposed Pilot Project with great skepticism. Louisiana Energy Services (LES) is working to build a uranium enrichment facility in New Mexico with strong support from the community. The Congressional delegation may view the Pilot Project as benefiting USEC in the future at the expense of potential competition from LES.

Members of the Oregon, Washington, Idaho, and Montana delegations are likely to be highly appreciative of the $50 million benefit to ratepayers through BPA rates.

The uranium mining, conversion and enrichment industry is very concerned with the impact of DOE uranium inventories competing in the commercial uranium market. Although this Pilot Project will increase demand for enrichment at the Paducah GDP, there will be a slight reduction in demand for natural uranium. The House version of the Energy Bill as currently drafted, H.R. 6, would annually limit the "[t]otal amount of uranium transferred [by DOE] ... for consumption by commercial nuclear power end users." The amount of material

covered by the Pilot Project alone would be within the limit allowed for under H.R. 6.

If it becomes law, H.R. 6 would limit federal transfers of uranium to three million pounds of U3O8 equivalent per year for the period FY 2005-09. Other planned sales or transfers in combination with the Pilot Project could exceed the annual limit for uranium transfers set forth in H.R. 6. Specifically, a proposed sale of low-enriched uranium derived from 17 MT of highly-enriched uranium (HEU) by NNSA: 0 M lbs in 2005; 2.3 M lbs in 2006; 3.0 M lbs in 2007 and 2.3 M lbs in 2008. BPA will work with EM, EN and USEC to accelerate planned 2005 transfers under the Pilot Project toward the 3.0 M lbs limit, and to have part of the DUF_6 Pilot Project deferred starting in FY 2006, if necessary. BPA will consult and coordinate on a continuing basis with NNSA to adjust BPA transfers during the two year term of the Pilot Project so as not to conflict with actual NNSA transfers should a uranium transfer limit, such as the one set forth in H.R. 6, be enacted. However, members of the Senate and House Armed Service Committees are likely to express concerns that the Pilot Project will negatively affect the ability of NNSA to transfer uranium if the H.R. 6 limit on uranium transfers is signed into law.

If approved, DOE should enter into discussions with the uranium mining industry to assure them that DOE will remain sensitive to the price of uranium and ensure that DOE's huge tails inventory will be managed to avoid any impact to market prices. Unfortunately, the price may continue to rise or drop independent of any DOE action, but the industry may blame DOE for any price drop. Members of the Nebraska and Wyoming Congressional delegations (where uranium mining still occurs) are likely to strongly oppose the Pilot Project.

If the Pilot Project is successful, the Tennessee Valley Authority may propose a similar arrangement to transfer DUF6 to support their needs connected to tritium production and the requirement for U.S. origin uranium (foreign source uranium is generally restricted by agreement to non-defense purposes).

POLICY IMPACT: None

RECOMMENDATION: Approve the Pilot Project Agreement (Attachment 1) based on the market analysis (Attachment 2) that has concluded there is insignificant impact to the domestic nuclear fuel supply industry.

Approval: _____

CONCURRENCE:	Chief Financial Officer/ME-1	S/	5/6/05
	Nuclear Energy/NE-1	S/	5/6/05
	General Counsel/GC-1	S/	5/6/05
	National Nuclear Security/NA-1	S/	5/6/05
	Congressional Affairs/CI-1	S/	5/6/05

2 Attachments

cc: I. Kolb - S-1
L. Brown - S-3
K. Kolevar - TD-1
E. Nicoll - CI-20
W. Murphie - PPPO
S. Wright - BPA

Department of Energy

Bonneville Power Administration
Mail Drop 1399
P.O. Box 968
Richland, Washington 99352-0968

POWER BUSINESS LINE

May 6, 2005

In reply refer to: PGC/Richland

Letter of Agreement No. 05GS-75180

Mr. William Murphie, Manager
United States Department of Energy
Portsmouth/Paducah Project Office
1017 Majestic Drive, Suite 200
Lexington, KY 40513

Dear Mr. Murphie:

Bonneville Power Administration (BPA), an agency of the U.S. Department of Energy (DOE), in coordination with Energy Northwest (EN), a joint operating agency organized under Washington State law, and the Environmental Management Office (EM) of DOE have agreed to implement a PILOT project to determine the usability of a portion of DOE's depleted uranium hexafluoride (DUF_6) inventory. The DUF_6, as identified below, may contain enough uranium (U^{235}) for practical use in a nuclear power production reactor, after enrichment.

If successful, this interdepartmental PILOT project will result in the avoidance by EM of as much as approximately $40 million in disposal costs and save a projected $50 million in future nuclear fuel costs for EN's Columbia Generating Station, the generating project capacity of which BPA has heretofore acquired. In order to implement this PILOT project, EN, in coordination with BPA, will assume responsibility for funding the PILOT project (enrichment and uranium fees), estimated to cost approximately $88 million.

To commence the PILOT project work, and as consistent with interdepartmental property transfers, BPA requests delivery of DUF_6 from EM to BPA on the following basis:

1. DUF_6 cylinders from two DOE Lots will be delivered by EM to U.S. Uranium Enrichment Corporation (USEC) on a schedule mutually agreed upon by the parties hereto.

2. Lot 1 is defined as 165 Type 48G DUF_6 cylinders with a minimum assay between 0.400 to 0.4399 wt% U^{235} and containing approximately 1,405,620 KgU as DUF_6 located in Paducah, Kentucky.

3. Lot 2 is defined as 507 Type 48G DUF_6 cylinders with a minimum assay of 0.440 wt% U^{235} and containing approximately 4,314,400 KgU as DUF_6 located in Paducah, Kentucky.

4. Delivery by EM to USEC will be at USEC's Paducah, Kentucky, Enrichment Plant ("delivery point"). Title to the DUF_6 shall pass and delivery shall be deemed made from EM to BPA upon acceptance for processing by USEC at the USEC Paducah Enrichment Plant. Following acceptance, title shall thereafter pass without further condition from BPA to EN upon commencement of processing by USEC.

5. Any DUF_6 cylinders that are transferred to delivery point but not accepted for processing by USEC at the Paducah plant ("rejected cylinders") shall be exchanged with a cylinder of equivalent assay. The rejected cylinder shall be returned to EM who shall make all necessary arrangements therefore.

6. Either BPA or EM, in its sole discretion, may terminate transfers of cylinders to the delivery point under this Agreement at any time. Such termination shall be in the form of written notice and shall be effective upon receipt. As promptly as practicable after such notice, EM shall undertake on BPA's behalf, and under arrangements to be made by EM, to return any unprocessed cylinders from the delivery point. Title and future liability for any cylinders deemed delivered and returned under this item 6 will transfer back to EM upon return.

7. EM shall be reimbursed its cost of transferring each cylinder to the delivery point hereunder, at $2,200.00 (Two Thousand Two Hundred Dollars) per cylinder. Such payments shall be made to EM, or its designated agent, within thirty days of the date of invoicing. For each cylinder successfully processed under this PILOT project as provided herein, EM shall be paid a fixed fee of $10,450.00 (Ten Thousand Four Hundred and Fifty Dollars) per cylinder. Unless otherwise agreed to by the parties, such payments shall be made to EM, or its designated agent, in cash or in-kind as designated in writing by EM, within thirty days of the conclusion (whether by completion or termination) of the PILOT project.

8. For each cylinder that is returned to EM under item 5 or item 6, EM shall be paid its cost of transferring each cylinder from the delivery point back to EM, at $2,200.00 (Two Thousand Two Hundred Dollars) per cylinder, which shall be considered EM's full, complete, and total compensation per cylinder for any and all such cylinders so returned. Payment of such transfer charge will be made to EM, or its designated agent within thirty days of the date of invoicing.

9. BPA and EM intend to pursue the reuse of additional uranium inventories at the conclusion of the PILOT project on a schedule and terms to be mutually agreed upon. BPA has a significant financial stake in the PILOT project and if such project successfully meets the expectations of both parties, EM agrees to work with BPA to make additional quantities of DUF_6 available for reuse. BPA further agrees to make a good faith effort to assist EM in the reutilization of other surplus uranium.

10. EM shall accept any payments hereunder from BPA or BPA's designee, which designee may include EN.

Please indicate your concurrence with this Agreement by executing one of the two included duplicate originals of this Agreement. Please return one executed original to me in the stamped, pre-addressed envelope.

Sincerely,

Andrew J. Rapacz, Manager
Contract Generating Resources
Bonneville Power Administration

ACCEPTED

By _____
Manager, Portsmouth & Paducah Sites

Name _____
(Print/Type)

Date _____

cc:
Mr. Scott W. Oxenford – Energy Northwest, PE04
Mr. Dale K. Atkinson – Energy Northwest, PE08
Ms. Pamela R. Bradley – Energy Northwest, PE13
Mr. Eric K. Rockett – Energy Northwest, PE26

Attachment

ANALYSIS OF PROPOSED DEPLETED URANIUM HEXAFLUORIDE TRANSFER[1]

Proposal

Bonneville Power Administration (BPA), an agency of the Department of Energy, in conjunction with Energy Northwest (EN), a company that owns and operates the Columbia Generating Station nuclear plant, and the Office of Environmental Management (EM) have proposed to implement a Pilot Project to determine the usability of a portion of the Department's depleted uranium hexafluoride (DUF_6)[2] inventory. The proposed Pilot Project would require the transfer of approximately 8,534 metric tons of high assay DUF_6 over a two year period.

In order to help assess the relative impacts of the proposed transfer on domestic industry, an analysis of the nuclear fuel market is provided below:

Market Analysis

Uranium Market

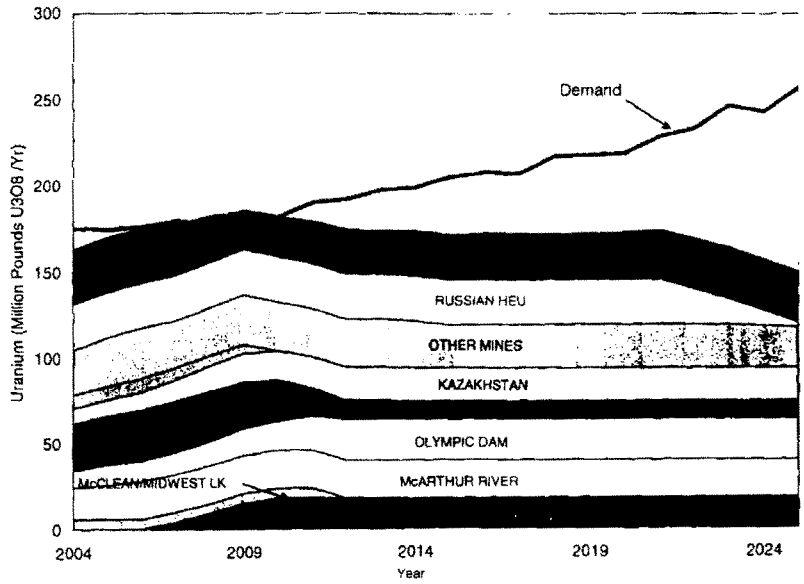
The uranium market has undergone major changes during the past several years, and has evolved from a buyer's market (as characterized by excess supply) into a seller's market (as characterized by limited supply and rising prices). Market price has sharply increased for uranium concentrates (U_3O_8). The end-of-month April 2005 price for natural uranium of approximately $24 is about 240 percent of the $9.90 per pound price in April 2002. The long-term contract price for uranium has increased from $18.00 per pound in May 2004[3] to $28 per pound in April 2005 – a 55 percent increase over ten months. Among the causes of this increase have been a series of events that included a uranium processing facility fire in Australia, a uranium mine flood in Canada, and the commercial dispute between two Russian entities that resulted in an interruption of supply to a significant number of U.S. nuclear power plants. Uranium prices have increased to a level where it is economic to restart old mines and expand existing uranium mines.

As the substantial stocks of uranium inventory (both commercial and government) are drawn down during this decade, primary production of U_3O_8 will have to expand at existing mines and new mines will have to be developed in order to supply existing

[1] All supply data and U.S. demand data referenced in this report are sourced to Energy Resources International, Inc. (ERI) unless otherwise specified; world demand data is sourced to the World Nuclear Association (WNA).
[2] A glossary for all terms can be found in Appendix A.
[3] May 2004 was the first publication of long-term price indicators. All pricing data is from publically available data published by Ux Consulting.

demand. While overall supply is sufficient to meet current U_3O_8 requirements as shown in Figure 1, increased investment is required to expand present mine capacity, and begin exploration to identify new ore deposits.

Figure 1. World Supply and Demand for Uranium



World annual uranium requirements are expected to increase from current levels of about 175 million pounds U_3O_8 per year to 182 million pounds by 2010 and then rise almost linearly to 257 million pounds per year by 2025. U.S. requirements are expected to increase from 52 million pound per year today to approximately 55 million pounds per year by 2025.

Mine production and uranium inventories are expected to meet approximately 70% and 30%, respectively, of world cumulative requirements during the remainder of this decade, and 75% and 25%, respectively, during the next 15 years, assuming that the HEU Agreement, which represents 24 million pounds U_3O_8, is extended beyond 2013. Four countries are expected to provide about 91% of Western world mine production during this decade: Canada, Australia, Namibia, and Niger. These four countries along with Russia, Kazakhstan, and Uzbekistan are projected to provide about 93% of total world mine production through 2010.

Mine production is projected to rise from 105 million pounds in 2004 to about 225 million pounds by 2025. Uranium inventories are projected to provide supply annually that declines gradually from about 59 million pounds in 2004 to approximately 33 million pounds by 2025.

Uranium Conversion Services Market

Until recently, the market for conversion services (*i.e.*, to convert uranium concentrate to uranium hexafluoride) had been characterized by more than adequate capacity in the presence of a relatively flat market demand. This situation changed dramatically in November 2003 when the Russian government trading company, Tenex[4], announced that it would no longer honor contracts to supply its U.S. marketing agent GNSS with either U_3O_8 or UF_6. This situation was further exacerbated when the operation of ConverDyn uranium conversion plant located in Metropolis, Illinois, was disrupted in both September and December 2003. These shutdowns resulted in an immediate tightening of the conversion market. At the same time, many fuel managers began purchasing uranium and conversion for inventory to avoid future supply disruption thereby placing additional demand in the market.

Presently there are five primary commercial suppliers of uranium conversion services. Two of these suppliers (Cameco Corporation in Canada and ConverDyn in the U.S.) are located in North America. The other suppliers are in the United Kingdom, France and Russia. The BNFL plant in the U.K. that was to have been shutdown in 2006, has been contracted to Cameco through 2016, boosting Cameco's conversion capacity by approximately 50%.

As reflected in Figure 2, world annual requirements for conversion services are projected to rise gradually from 64 million kilograms in 2004 to 94 million kilograms by 2025. U.S. requirements are projected to remain relatively constant at approximately 20 million kilograms through 2025.

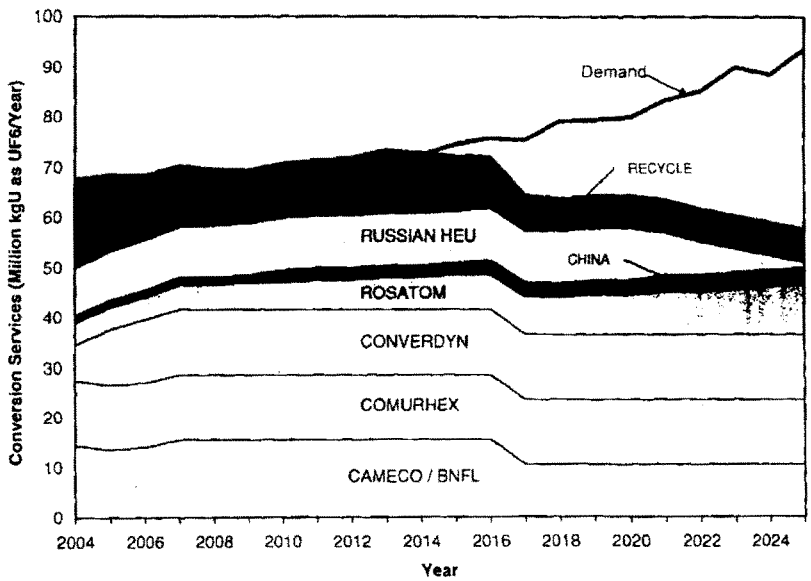
Production of conversion services and available inventories of natural uranium hexafluoride will provide an adequate supply of conversion through the middle of the next decade. However, the supply margins are extremely thin, and any future interruption in supply would have a significant impact on the nuclear fuel market.

Production by the world's five primary suppliers of conversion services met approximately 63% of world requirements during 2004, and UF_6 associated with the conversion component of the HEU Agreement, inventories, enrichment of depleted uranium, and recycle savings in Europe met the remainder of requirements. Conversion

[4] Joint Stock Company Techsnabexport (Tenex) – wholly owned company of the Russian Government, controlled by the Federal Atomic Energy Agency, that acts as Russia's executive agent for implementing the HEU Agreement.

capacity will rise from a current level of about 44 million kilograms to approximately 50 million kilograms by the end of the decade through plant expansion. The difference between these levels of production capacity and requirements is covered by the conversion component of the HEU Agreement deliveries, inventories, as well as depleted uranium upgrading in Russia, and recycle savings. Inventory supply could collectively provide the equivalent of at least 20,000 MTU of UF_6 per year through the middle of the next decade.

Figure 2. World Supply and Demand for Conversion Services



ConverDyn's shut down and loss of eight months production caused the North American spot market price which was $5.00 per kilogram of uranium (kgU) as UF_6 at the end of March 2003, to jump to $12, its current price level (April 2005) – a 140 percent increase in two years.

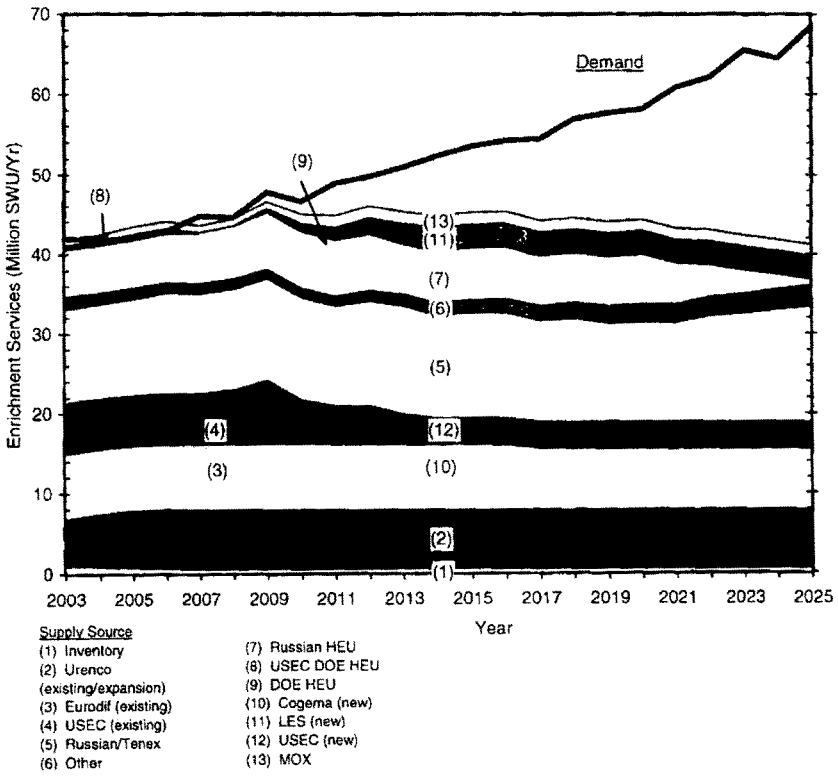
Enrichment Services Market

Supply in the uranium enrichment market is adequate. Louisiana Energy Services (LES) has announced plans to build a new 3 million Separative Work Units (SWU) per year uranium enrichment plant, the National Enrichment Facility, in Eunice, New Mexico, using Urenco's gas centrifuge technology. It expects to bring the new plant into operation beginning in 2008 and to achieve full capacity in 2013. LES filed a commercial plant license application with the Nuclear Regulatory Commission (NRC) in December 2003. USEC has also announced plans to deploy a new 3.5 million SWU per year gas centrifuge uranium enrichment plant by the end of 2010. On August 23, 2004, USEC submitted a license application to the NRC to build and operate its American Centrifuge Plant in Piketon, Ohio.

Under the HEU Agreement, USEC has agreed to purchase from Tenex 5.5 million SWU each year to total 500 metric tons of highly enriched uranium by 2013. The 5.5 million SWU per year is equivalent to approximately 45 percent of the annual U.S. requirements for enrichment services. Even with planned new enrichment capacity, the HEU Agreement will remain an essential source of supply for the foreseeable future.

In addition, EURODIF SA. has announced plans to replace its existing uranium enrichment plant with a new 7.5 million SWU per year plant that also utilizes Urenco's gas centrifuge machines. The new plant, which is expected to begin operation in 2007 and achieve full production by 2016, will be located in Tricastin, France, at the site of the existing enrichment plant.

Figure 3. World Supply and Demand for Enrichment Services



As reflected in Figure 3, annual world enrichment services requirements are projected to rise from 42 million SWU in 2004 to 47 million SWU by 2010 and to 54 million SWU by 2015. Enrichment services requirements are forecast to rise to 69 million SWU per year by 2025.

The published long-term base price for uranium enrichment services rose over 23%, from $85 per SWU in December 2000 to $105 per SWU in November 2001. Since then, the long-term price has risen to $110 per SWU (April 2005). Little in the way of excess enriched uranium product (EUP) inventories are available to the spot market.

Assessment of Market Impact from the Proposed Transfer to EN

For purposes of assessing the impact of the proposed transfer of 8,534 metric tons of depleted uranium hexafluoride, the Office of Nuclear Energy, Science and Technology contracted with Energy Resources International, Inc. (ERI) to conduct a detailed analysis of potential market impacts from the introduction of all Department uranium transfers or sales under consideration that could result in the displacement of material that would have been sold by a commercial supplier in the 2005 – 2012 period.

The market study includes the Department's planned sales and transfers such as the nuclear material that was authorized under previous government agreements with the Tennessee Valley Authority (TVA) and with USEC prior to its privatization. Since this material has long been accounted for by industry in the commercial markets, it is included in ERI's market base assumptions. The analysis also includes the 15 to 17.4 metric tons of HEU that the Department announced in October 2004 to be down blended and sold into the commercial market beginning in 2006.

The Potential Impact of Known and Proposed Sales and Transfers from the Department's Uranium Inventories

This section reviews the government's proposed disposition schedule for the BPA Pilot Project in terms of natural uranium, conversion services, enrichment services and the potential impact of the proposed transfer, if any, on each of the three market sectors. In addition, as shown in these tables, it was assumed that other proposed projects using Department inventories could be sold or transferred into the commercial market between 2005 and 2012.

Table 1 presents the total uranium inventory that the Department is considering for sale or transfer between 2005 and 2012. The table separates the uranium that the market has already taken into account (ERI's base assumptions) from the incremental uranium that is the subject of the present market analysis. The quantities are given in millions of pounds of uranium concentrate equivalent (we have calculated and estimated amounts of (U_3O_8e) for DUF_6 and LEU in order to consider the impact on all three markets (uranium, conversion and enrichment).

TABLE 1
GOVERNMENT URANIUM & URANIUM -EQUIVALENT MATERIAL
TO BE SOLD/TRANSFERRED BETWEEN 2005 AND 2012
(MILLION POUNDS U3O8)

MATERIAL IDENTITY	RESPONSIBLE ORGANIZATION	YEAR								
		2005	2006	2007	2008	2009	2010	2011	2012	TOTAL
Material Already Acounted for in Market:										
50 MT HEU To USEC	NNSA	2.30	0.20	0.00	0.00	0.00	0.00	0.00	0.00	2.50
TVA Off-Spec. HEU	NNSA	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	10.40
Research Reactors HEU	NNSA	0.20	0.20	0.10	0.20	0.30	0.10	0.10	0.30	1.50
15 to 17.4 MT HEU	NNSA	0.00	2.30	3.00	2.30	0.00	0.00	0.00	0.00	7.60
Total Material Accounted for by the Market:		**3.80**	**4.00**	**4.40**	**3.80**	**1.60**	**1.40**	**1.40**	**1.60**	**22.00**
Material to be Disposed in Market										
BPA Pilot Project	EM	2.50	2.50	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Other Proposed Projects	Multiple	1.75	2.50	2.60	1.80	4.10	3.60	3.10	0.70	20.15
Total Material Proposed to be Disposed:		**4.25**	**5.00**	**2.60**	**1.80**	**4.10**	**3.60**	**3.10**	**0.70**	**25.15**
Total Material Disposal During 2005-2012:		**8.05**	**9.00**	**7.00**	**5.60**	**5.70**	**5.00**	**4.50**	**2.30**	**47.15**

Table 2 presents the equivalent conversion services quantities that the DOE is considering to dispose of between 2005 and 2012. The quantities are given in millions of kilograms of UF_6.

TABLE 2
GOVERNMENT CONVERSION SERVICES-EQUIVALENT MATERIAL
TO BE SOLD/TRANSFERRED BETWEEN 2005 AND 2012
(MILLION kgU as UF6)

MATERIAL IDENTITY	RESPONSIBLE ORGANIZATION	YEAR								
		2005	2006	2007	2008	2009	2010	2011	2012	TOTAL
Material Already Acounted for in Market:										
50 MT HEU To USEC	NNSA	0.88	0.08	0	0	0	0	0	0	0.96
TVA Off-Spec. HEU	NNSA	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	3.98
Research Reactors HEU	NNSA	0.08	0.08	0.04	0.08	0.11	0.04	0.04	0.11	0.57
15 to 17.4 MT HEU	NNSA	0	0.88	1.15	0.88	0	0	0	0	2.91
Total Material Accounted for by the Market:		**1.45**	**1.53**	**1.68**	**1.45**	**0.61**	**0.54**	**0.54**	**0.61**	**8.42**
Material to be Disposed in Market										
BPA Pilot Project	EM	0.96	0.96	0	0	0	0	0	0	1.91
Other Proposed Projects	Multiple	0.67	0.96	1.00	0.69	1.57	1.38	1.19	0.27	7.71
Total Material Proposed to be Disposed:		**1.63**	**1.91**	**1.00**	**0.69**	**1.57**	**1.38**	**1.19**	**0.27**	**9.62**
Total Material Disposal During 2005-2012:		3.08	3.4	2.7	2.1	2.2	1.9	1.7	0.9	18.04

Table 3 presents the equivalent enrichment services quantities that the DOE is considering to dispose of between 2005 and 2012. The U_3O_8e quantities were converted to Separative Work Unit equivalent (SWUe) for conversion and enrichment market analyses.

TABLE 3
GOVERNMENT ENRICHMENT SERVICES-EQUIVALENT MATERIAL
TO BE SOLD/TRANSFERRED BETWEEN 2005 AND 2012
(MILLION SWU)

MATERIAL IDENTITY	RESPONSIBLE ORGANIZATION	YEAR								
		2005	2006	2007	2008	2009	2010	2011	2012	TOTAL
Material Already Acounted for in Market:										
50 MT HEU To USEC	NNSA	0.63	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.68
TVA Off-Spec. HEU	NNSA	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	2.62
Research Reactors HEU	NNSA	0.07	0.07	0.03	0.07	0.10	0.03	0.03	0.10	0.50
15 to 17.4 MT HEU	NNSA	0.00	0.66	0.85	0.66	0.00	0.00	0.00	0.00	2.16
Total Material Accounted for by the Market:		1.02	1.10	1.22	1.05	0.43	0.36	0.36	0.43	5.96
Material to be Disposed in Market										
BPA Pilot Project	EM	-0.25	-0.25	0.00	0.00	0.00	0.00	0.00	0.00	-0.50
Other Proposed Projects	Multiple	0.01	0.00	0.00	0.00	0.09	0.17	0.20	0.20	0.67
Total Material Proposed to be Disposed:		-0.24	-0.25	0.00	0.00	0.09	0.17	0.20	0.20	0.17
Total Material Disposal During 2005-2012:		0.78	0.85	1.22	1.05	0.52	0.53	0.56	0.63	6.13

Potential Impact on the Uranium Concentrates Market

Table 4 presents the total annual uranium-equivalent government sales/transfer material that the Department is considering to dispose of between 2005 and 2012, and the projected annual world and domestic supply and demand for uranium. ERI has concluded that there will be no world market impact if the proposed sales/transfers are projected to be less than 3% of world demand and less than 10% of domestic demand. As the domestic market is part of the global market, there is really only one market in which all suppliers and consumers participate. The Department's sales/transfers of uranium include not only the BPA Pilot Project transfers of DUF_6, but also other proposed sales or transfers. These sales and transfers together represent material that the market may not yet have taken into consideration in future price formation.

Total world supply and demand is projected to be almost in balance, with cumulative demand during the eight-year period being approximately 32 million pounds greater than supply, an annual average shortfall of supply of about 4 million pounds. The quantity of equivalent uranium from the BPA Pilot Project, which is approximately 2.5 million pounds U_3O_8 equivalent per year as shown in Table 1, represents only 4.8 percent of U.S. demand in 2005 and 2006 and 1.5 percent of world demand.

Since production of uranium over the 2005 through 2012 timeframe is estimated to be approximately 70 percent of global uranium demand, new production is required to meet expected demand. Towards this end, the Department's proposed uranium sales/transfers can help bridge the gap between current production levels and the time when more supply becomes available in the future.

Specific to the proposed BPA Pilot Project, the transfer of approximately 5 million pounds U_3O_8(e) planned during the 2005 and 2006 timeframe is unlike other Department transfers or sales because it will only be used to meet the specific reactor requirements of EN and not sold into the market. Furthermore, because additional processing is required before it can be useable as fuel, this uranium will not be used in EN's reactor until 2009 and beyond.

TABLE 4

PROJECTED WORLD URANIUM SUPPLY AND DEMAND, AND PROPOSED MATERIAL DISPOSITION (MILLION POUNDS U3O8)

SUPPLY & DEMAND	YEAR								TOTAL
	2005	2006	2007	2008	2009	2010	2011	2012	
SUPPLY:									
TOTAL MINE PRODUCTION (a)	111.7	117.2	121.3	128.9	137.5	132.3	128.4	121.9	999
TOTAL AMU (b)	58.5	57.5	55.7	53.2	48.1	49.4	50.9	52.4	426
TOTAL WORLD SUPPLY	170.2	174.7	177	182.1	185.6	181.7	179.3	174.3	1425
DEMAND:									
TOTAL WORLD DEMAND (c)	174.7	176.0	179.2	178.3	185.0	181.5	190.1	192.0	1457
TOTAL U.S. DEMAND (d)	52.2	53.5	53.0	52.9	52.9	52.9	52.7	52.6	423
WORLD SUPPLY-DEMAND DIFFERENCE:	-4.5	-1.3	-2.2	3.8	0.6	0.2	-10.8	-17.7	-32
DOE PROPOSED DISPOSITION (e):	4.3	5.0	2.6	1.8	4.1	3.6	3.1	0.7	25

(a) World uranium production based on mine nameplate capacity.
(b) World already-mined uranium (inventories in all forms and plutonium recycle in Europe and Japan).
(c) World Nuclear Association demand projection of April 2005.
(d) ERI U.S. demand projection of April 2005.
(e) DOE disposition of uranium in various forms; see Table 1.

Potential Impact on the Conversion Services Market

Table 5 presents the total annual conversion services-equivalent sales/transfers that the Department proposes to sell or transfer between 2005 and 2012, the projected annual world and U.S. demand for conversion services, and the projected world production. It can be seen that the proposed disposition is projected to offset the very thin margin between projected supply and projected demand.

TABLE 5

PROJECTED WORLD CONVERSION SERVICES SUPPLY AND DEMAND, AND PROPOSED MATERIAL DISPOSITION (MILLION kgU AS UF6/YEAR)

SUPPLY, DEMAND, & DOE SALE	YEAR								TOTAL
	2005	2006	2007	2008	2009	2010	2011	2012	
SUPPLY:									
PROJECTED WORLD PRODUCTION (a)	43.50	45.50	48.00	48.00	48.50	49.50	50.00	50.00	383.00
PROJECTED INVENTORY SUPPLY (b)	22.52	22.16	21.44	20.50	18.55	19.00	19.57	20.18	163.91
TOTAL WORLD SUPPLY	66.02	67.66	69.44	68.50	67.05	68.50	69.57	70.18	546.91
DEMAND:									
TOTALWORLD DEMAND (c)	63.62	63.95	65.15	64.67	67.20	66.15	69.42	70.18	530.35
TOTAL U.S. DEMAND (d)	19.99	20.46	20.28	20.24	20.23	20.23	20.18	20.13	161.74
WORLD SUPPLY-DEMAND DIFFERENCE:	2.40	3.71	4.29	3.82	-0.15	2.35	0.14	-0.01	16.56
DOE PROPOSED DISPOSITION (e)	1.63	1.91	1.00	0.69	1.57	1.38	1.19	0.27	9.62

(a) Western world production based on 93% of conversion plant nameplate capacity.
(b) World inventories in all forms and plutonium recycle in Europe and Japan.
(c) World Nuclear Association demand projection of April 2005
(d) ERI U.S. demand projection of April 2005.
(e) DOE proposed disposition of uranium in various forms; see Table 2.

As shown in Table 5 implementation of all the Department's proposed material dispositions would result in a total of 9.6 million kgU(e) of conversion services being introduced into the market between 2005 and 2012. This is an average of approximately 1.2 million net kgU(e) per year of conversion services equivalent. However, the proposed transfers and sales would offset the projected shortfall, and thus, there would essentially be no impact on the market as a result of the proposed sales/transfers.

The proposed BPA Pilot Project alone would result in the transfer of uranium containing conversion services amounting to approximately 0.96 million kgU per year or 4.7 percent of U.S. demand (or about 1.5 percent of world demand) in 2005 and 2006. ConverDyn, the only domestic convertor, is producing to make up an 8 million kgU loss of production from its NRC mandated shutdown last year. Consequently its conversion capacity until 2008 is believed to be committed. ERI's analysis notes that the conversion industry worldwide is vulnerable to supply shortages and therefore the proposed Department transfer will provide needed supply that will be quickly absorbed by utilities to relieve pressure on the fuel processing chain and to increase inventories.

Potential Impact on the Enrichment Services Market

Table 6 presents the total annual enrichment services-equivalent that the Department proposes to sell or transfer between 2005 and 2012, the projected annual world and U.S. demand for enrichment services, and the projected U.S. production.

As shown in Table 6, implementation of the proposed material disposition schedule would result in little impact on the enrichment market. Under the proposed BPA Pilot

Project, new enrichment demand of approximately 508,000 SWU will actually be created over a two year period in order to enrich the DUF_6 up to the assay of natural uranium. The BPA Pilot Project transfer represents 1.9 percent of domestic enrichment demand and 0.6 percent of world demand.

TABLE 6

PROJECTED WORLD ENRICHMENT SUPPLY AND DEMAND, AND PROPOSED MATERIAL DISPOSITION (MILLION SWU)

SUPPLY & DEMAND	YEAR								
	2005	2006	2007	2008	2009	2010	2011	2012	TOTAL
SUPPLY:									
TOTAL PRODUCTION (a)	34.32	35.65	35.23	36.41	37.42	39.47	35.07	36.25	289.82
PROJECTED INVENTORY SUPPLY (b)	8.42	8.51	8.70	8.63	8.00	8.23	8.52	8.55	67.56
TOTAL WORLD SUPPLY	42.74	44.16	43.93	45.04	45.42	47.70	43.59	44.80	357.38
DEMAND:									
TOTAL WORLD DEMAND (c)	42.07	42.86	44.72	44.59	47.82	46.62	48.95	49.84	367.47
TOTAL U.S. DEMAND (d)	13.01	13.36	13.28	13.29	13.33	13.37	13.36	13.36	106.37
WORLD SUPPLY-DEMAND DIFFERENCE:	0.67	1.30	-0.79	0.45	-2.40	1.09	-5.36	-5.04	-10.09
DOE PROPOSED DISPOSITION (e):	-0.24	-0.25	0.00	0.00	0.09	0.17	0.20	0.20	0.17

(a) World production based on economic capacity.
(b) World inventories in various forms and plutonium recycle in Europe and Japan.
(c) World Nuclear Association demand projection of April 2005
(d) ERI U.S. demand projection of April 2005.
(e) DOE proposed disposition of uranium in various in various forms; see Table 3.

Market Implications and Conclusions

It is believed that the quantities of uranium, conversion services, and enrichment services that would be introduced into the commercial nuclear fuel market are so small over the 2005 through 2012 timeframe that they would have a minimal impact on the domestic and world markets and, therefore, it should not deter any future uranium exploration and development plans, conversion facility expansion or enrichment supplier plans to construct new enrichment facilities.

In the past, nuclear fuel companies were very sensitive to government inventories entering the nuclear fuel markets as the transfers or sale was perceived to depress prices. Since the current uranium market is characterized by a primary supply shortfall and prices have been rising for the past year with other markets (conversion) showing tightening as well as rising prices, we believe this transfer would have little impact on the market, and may in fact represent necessary supply to mitigate an even more rapid rise in price.

Appendix A

Glossary

Cameco Corporation – A Canadian corporation that is the world's largest supplier of uranium and one of the largest suppliers of uranium conversion services. Cameco is one of the three members of the Western Consortium under the Commercial Feed Agreement.

COGEMA – A French company owned by Areva that is active in all phases of the nuclear fuel cycle including uranium enrichment production. Cogema is one of the members of the Western Consortium under the Commercial Feed Agreement.

Commercial Feed Agreement – An agreement between members of the Western Consortium and Russia whereby the natural uranium feed component associated with the Russian LEU delivered under the HEU Agreement after 1998 is purchased for resale in the commercial uranium market. Sales of this natural uranium in the United States is subject to quotas set forth in the USEC Privatization Act.

ConverDyn – The only U.S. convertor of uranium hexafluoride.

conversion – The process whereby natural uranium in the form of an oxide is converted to uranium hexafluoride (see uranium hexafluoride or UF_6) gas by the addition of fluorine.

depleted uranium hexafluoride (DUF_6)– Uranium that is fluorinated whose content of the fissile isotope uranium-235 is less than the 0.7 percent (by weight) found in natural uranium, so that it contains more uranium-238 than found in natural uranium.

down blended – The term used to describe the process whereby highly enriched uranium is mixed with depleted, natural, or low enriched uranium to create low enriched uranium. For example, one ton of highly enriched uranium can be mixed or blended with approximately 30 tons of natural or low enriched uranium to create 31 tons of commercial grade low enriched uranium.

enriched uranium – Uranium whose content of the fissile isotope uranium-235 is greater than the 0.7 percent (by weight) found in natural uranium. (See uranium, natural uranium, and highly enriched uranium.)

enriched uranium product (EUP) – Uranium that has been converted to UF_6 by adding fluorine and the U-235 level has been enriched greater than natural uranium (0.711 Percent U-235).

Energy Resources International, Inc. (ERI) – Internationally recognized nuclear fuel cycle consultants and authors of the independent assessment of market impacts of government sales and transfers on the uranium, conversion and enrichment industries.

EURODIF SA. –The operating company for the Georges Besse gaseous diffusion uranium enrichment plant in France that AREVA, a French integrated nuclear fuel supply and services company, has majority ownership interest.

Executive Agent – Under the HEU Agreement, these are the commercial companies responsible for implementing the HEU Agreement on behalf of the U.S. (USEC) and Russia (Tenex) Governments.

fissile material – Any material fissionable by thermal (slow) neutrons. The three primary fissile materials are uranium-233, uranium-235, and plutonium-239.

gas centrifuge - A uranium enrichment process that uses centrifuges to spin uranium hexafluoride in gaseous form at high speeds and separate uranium-235 isotopes from the uranium-238 isotopes based on their difference in atomic weight.

gaseous diffusion – A uranium enrichment process where uranium hexafluoride in gaseous form is forced through a series of membranes to increase the concentration of uranium-235 isotopes.

GNSS – Global Nuclear Supply and Services, Inc. was until 2004 Tenex's U.S. marketing agent for the sale of natural uranium from the HEU Agreement.

HEU Agreement – The *Agreement Between the Government of the United States and the Government of the Russian Federation Concerning the Disposition of Highly Enriched Uranium Extracted from Nuclear Weapons* was signed on February 18, 1993. The HEU Agreement provides for the purchase over 20 years (1993–2013) of 500 metric tons of weapons-origin highly enriched uranium converted to commercial grade low-enriched uranium from the Russian Federation. This agreement is also referred to as the U.S.-Russian Highly Enriched Uranium Purchase Agreement.

highly enriched uranium or HEU – Uranium whose content of the fissile isotope uranium-235 has been increased through enrichment to 20 percent or more (by weight). The Russian HEU that is down blended under the HEU Agreement has an enrichment level of above 90 percent uranium-235.

kgU – Kilograms of uranium.

long-term price – In the context of this report, refers to the price paid for nuclear fuel materials and services that will be delivered more than one year after the contract is signed.

Louisiana Energy Services (LES) – A partnership between Urenco, Westinghouse Electric Company (a subsidiary of British Nuclear Fuels plc), and three U.S. nuclear utilities (Duke, Entergy, and Exelon), was formed to construct and operate a 3 million SWU uranium enrichment plant (called the National Enrichment Facility) in Lea County, New Mexico. LES proposes to utilize Urenco gas centrifuges for the new enrichment plant. LES plans to install 1 million SWU of capacity by 2009, increasing to 3 million SWU by 2013.

low-enriched uranium or LEU – Uranium whose content of the fissile isotope uranium-235 has been increased through enrichment to more than 0.7 percent but less than 20 percent by weight. Most nuclear power reactor fuel contains low-enriched uranium containing 3 to 5 percent uranium-235.

MTU – Metric tons of uranium.

natural uranium component – The feed material provided to a uranium enricher for producing enriched uranium and uranium tails. The natural uranium feed component consists of U_3O_8 from the mining industry and U_3O_8 to UF_6 conversion.

Nuclear Regulatory Commission (NRC) – The federal agency responsible for licensing and regulation of nuclear safety, safeguards and security of commercial nuclear facilities.

Paducah Gaseous Diffusion Plant – The only remaining operating uranium enrichment plant in the United States, located in Paducah, Kentucky.

Portsmouth Gaseous Diffusion Plant – A shutdown uranium enrichment plant maintained in cold standby and located in Piketon, Ohio.

Privatization Act - On April 26, 1996, the USEC Privatization Act, Public Law 104-134 (42 U.S.C. 2297h) was enacted.

RWE Nukem – A German company that is a trader of uranium and other nuclear fuel supply materials and services in the international market. RWE Nukem is one of the members of the Western Consortium under the Commercial Feed Agreement.

separative work units or SWU – The unit of measurement for the effort needed to enrich uranium.

spot market price or spot price – In the context of this report, refers to the price paid for nuclear fuel materials and services delivered within 6 months of the purchase date.

tails – Refers to depleted uranium hexafluoride produced during the uranium enrichment process.

Tenex – Joint Stock Company Techsnabexsport – a company that is wholly owned by the Russian Government and controlled by the Federal Atomic Energy Agency, Russian Federation, that acts as Russia's executive agent on the HEU Agreement.

uranium – A radioactive, metallic element with the atomic number 92; one of the heaviest naturally occurring elements. Uranium has 14 known isotopes, of which uranium-238 is the most abundant in nature. Uranium-235 is commonly used as a fuel for nuclear fission. (See natural uranium, enriched uranium, highly enriched uranium, and depleted uranium hexafluoride.)

Uranium Antidumping Suspension Agreement – In October 1992, the U.S. Department of Commerce signed agreements with six republics of the former Soviet Union whereby imports of uranium and enrichment would be restricted from end use in the United States.

uranium hexafluoride or UF6 – The form of uranium that is the end product of the uranium conversion process. The UF6 can then be fed through a uranium enrichment process, either diffusion or centrifuge.

United States Enrichment Corporation (USEC, Inc.) – Currently, the only enricher of uranium operating in the United States and operator of the Paducah Gaseous Diffusion Plant. USEC is also the U.S. executive agent on the HEU Agreement. USEC, which was formerly a wholly owned government corporation, was privatized in 1998.

Western Consortium – A group of three Western uranium suppliers (Cameco, COGEMA, RWE Nukem) that has signed an agreement with Russia to buy and then market the natural uranium associated with the HEU Agreement that remains in the U.S. under the Commercial Feed Agreement.

World Nuclear Association (WNA) -- The World Nuclear Association is the global organization that seeks to promote the peaceful worldwide use of nuclear power as a sustainable energy resource for the coming centuries. Specifically, the WNA is concerned with nuclear power generation and all aspects of the nuclear fuel cycle, including mining, conversion, enrichment, fuel fabrication, plant manufacture, transport, and the safe disposition of spent fuel.

Beard, Susan

From: Beard, Susan
Sent: Friday, December 16, 2005 3:10 PM
To: Krentel, David
Subject: Re: Sec 314 Barter Sales

My gut is that it is not permanent. Please talk to Mary

-----Original Message-----
From: Krentel, David <David.Krentel@hq.doe.gov>
To: Beard, Susan <Susan.Beard@hq.doe.gov>
Sent: Fri Dec 16 15:00:54 2005
Subject: Sec 314 Barter Sales

Susan -

According to the REDBOOK, the basic rule is that a provision in an annual appropriation is not permanent unless the language used or the nature of the provision makes it clear that Congress intended it to be permanent. Language indicating futurity or a provision of general character bearing no relation to the object of the appropriation can overcome the presumption that the provision is not permanent.

There are six additional factors used in determining if the provision is permanent:
1. The repeated inclusion of a provision in yearly appropprs acts indicates that it is not intended to be permanent.
2. The inclusion of a provision in the United States Code indicates permanence.
3. Legislative history is relevant, but usually is used to support a conclusion based on words of futurity.
4. If the provision bears no direct relationship to the appropriation act in which it appears, this is an indication of permanence..
5. The phrasing of a provision as positive authorization is an indication of permanence, but usually is considered in conjunction with words of futurity.
6. A provision is permanent if construing it as temporary would render it meaningless or produce an absurd result.

Factors 1, 2, 3, and 5 have never been used as the sole basis of finding permanence without words of futurity.

In terms of section 314, factor 5 is clearly present: the provision is a positive authorization. However, factor 5 needs to be supplemented by words of futurity. The REDBOOK states that "Addition of the phrase 'with respect to any fiscal year' makes the provision permanent. B-230110, April 11, 1988." Section 314 contains the phrase 'without fiscal year limitation' which is very similar, but the phrase modifies "to use any proceeds...to remediate uranium inventories" so I would construe that to mean that the receipts we get from the barter are to be treated as no year funds, not that the provision is permanent.

In short, I think this is grayer than I expected, but I don't think it is permanent.

Let me know what you think and then I will get with Mary Egger and then back to budget on this.

Thanks!

David N. Krentel
Deputy Assistant General Counsel for Legal Counsel United States Department of Energy
GC-77
Room 6A-211
202-586-6721

Beard, Susan

From: Grant, William
Sent: Wednesday, March 01, 2006 11:10 AM
To: Egger, Mary; Beard, Susan
Subject: RE: Section 314 of EWD '06

Mary,

I believe if we've sold the material and we have the cash in hand by 9/30/06, we'd still be able to use the funds until they were fully expended. If we do not receive the cash until after 9/30/06, however, we'd have to deposit any proceeds into the general Treasury because our authority to retain the proceeds expires with the appropriations bill come 9/30/06.

Will Grant
General Counsel/General Law
(202) 586-6965, Rm. 6A-228

-----Original Message-----
From: Egger, Mary
Sent: Wednesday, March 01, 2006 11:05 AM
To: Beard, Susan; Grant, William
Subject: FW: Section 314 of EWD '06
Importance: High

Larry Brown asked me whether GC has formed a view on this question yet. Have you had a chance to consider?

-----Original Message-----
From: Egger, Mary
Sent: Thursday, February 23, 2006 6:03 PM
To: Beard, Susan; Grant, William
Subject: Section 314 of EWD '06

I was in a meeting today on the development of DOE's uranium sales strategy that's been promised to Domenici and the upcoming DOE sale under section 314.

A legal issue came up with respect to the authority granted that affects the sales strategy. DOE needs to sell about 200 metric tons to get us through the rest of the fiscal year. Since we don't know that 314 will be reenacted (and I'm assuming we'd need it to retain the revenues) the question came up whether we could enter into a long term contract for the deliver of uranium in 2007 and 2008, with payment occurring upon delivery. Could we still retain the proceeds under a contract entered into in this fiscal year when we had 314 if the authority was not reenacted (or if it changed in some other substantive way)?

What saith you ??

Beard, Susan

From: Grant, William
Sent: Wednesday, May 30, 2007 5:44 PM
To: Hill, David R.; Beard, Susan; Egger, Mary
Subject: RE: Tc99 package

I just spoke with Terri Lee. Scott referenced a conversation he had with CBO in which they felt that section 314 had not moved forward into 07 or they would have scored it in the Revised CR.

From: Hill, David R.
Sent: Wednesday, May 30, 2007 4:24 PM
To: Grant, William; Beard, Susan; Egger, Mary
Subject: RE: Tc99 package

I know Scott doesn't like section 314. But he didn't like it in FY 2006 either. That he doesn't like it is different from saying that he (or anybody else) thinks that as a legal matter, it wasn't extended by the CR through the end of FY 2007. Before we say in the action memo that congressional staff disagree with us as on a legal matter (which is what the current version of the action memo says), I just want to be clear that is true. If all we know for sure is that Scott or others have problems with section 314 itself and don't like us using it, then we should say that instead.

From: Grant, William
Sent: Wednesday, May 30, 2007 4:21 PM
To: Beard, Susan; Hill, David R.; Egger, Mary
Subject: RE: Tc99 package

I believe Scott O'Malia has expressed surprise that 314 was continued under the CR.

From: Beard, Susan
Sent: Wednesday, May 30, 2007 4:20 PM
To: Hill, David R.; Egger, Mary; Grant, William
Subject: RE: Tc99 package

I think GC staff is in agreement that we have the authority. I am not aware of what Hill staffers think otherwise.

From: Hill, David R.
Sent: Wednesday, May 30, 2007 4:14 PM
To: Egger, Mary; Beard, Susan; Grant, William
Subject: Tc99 package

I note that this action memo says that some congressional staff disagree with the view that the CR continued the section 314 authority into FY 2007. Really? I thought the CR was crystal clear in extending the authorities of the FY06 act into FY07, except as specifically provided otherwise in the CR -- and the CR did provide otherwise as to several different things, just not as to the section 314 authority.

— Principal Statements —

U. S. Department of Energy
Consolidated Balance Sheets

As of September 30, 2007 and 2006

($ in millions)

	FY 2007	FY 2006
ASSETS: (Note 2)		
Intragovernmental Assets:		
Fund Balance with Treasury (Note 3)	$ 18,359	$ 17,189
Investments, Net (Note 4)	25,681	23,767
Accounts Receivable, Net (Note 5)	575	615
Regulatory Assets (Note 6)	5,456	5,476
Other Assets	8	1
Total Intragovernmental Assets	$ 50,079	$ 47,048
Investments, Net (Note 4)	202	210
Accounts Receivable, Net (Note 5)	3,939	4,020
Inventory, Net: (Note 7)		
Strategic Petroleum and Northeast Home Heating Oil Reserve	19,415	19,172
Nuclear Materials	21,040	21,199
Other Inventory	470	456
General Property, Plant, and Equipment, Net (Note 8)	24,866	24,122
Regulatory Assets (Note 6)	5,636	5,961
Other Non-Intragovernmental Assets (Note 9)	5,032	3,864
Total Assets	$ 130,679	$ 126,052
LIABILITIES: (Note 10)		
Intragovernmental Liabilities:		
Accounts Payable	$ 66	$ 82
Debt (Note 11)	11,481	10,780
Deferred Revenues and Other Credits (Note 12)	36	52
Other Liabilities (Note 13)	271	257
Total Intragovernmental Liabilities	$ 11,854	$ 11,171
Accounts Payable	3,793	3,817
Debt Held by the Public (Note 11)	6,427	6,436
Deferred Revenues and Other Credits (Note 12)	25,145	23,507
Environmental Cleanup and Disposal Liabilities (Note 14)	263,603	230,321
Pension and Other Actuarial Liabilities (Note 15)	12,433	12,059
Obligations Under Capital Leases (Note 16)	214	172
Other Non-Intragovernmental Liabilities (Note 13)	3,272	2,828
Contingencies and Commitments (Notes 12 and 17)	11,071	6,836
Total Liabilities	$ 337,812	$ 297,147
NET POSITION:		
Unexpended Appropriations		
Unexpended Appropriations - Earmarked Funds (Note 18)	$ 17	$ 47
Unexpended Appropriations - Other Funds	10,665	9,864
Cumulative Results of Operations		
Cumulative Results of Operations - Earmarked Funds (Note 18)	(5,524)	(1,345)
Cumulative Results of Operations - Other Funds	(212,291)	(179,661)
Total Net Position	$ (207,133)	$ (171,095)
Total Liabilities and Net Position	$ 130,679	$ 126,052

The accompanying notes are an integral part of these statements

U. S. Department of Energy
Consolidated Statements of Net Cost

For Years Ended September 30, 2007 and 2006

($ in millions)

	FY 2007	FY 2006 (Unaudited)
STRATEGIC THEMES:		
Energy Security:		
Energy Diversity		
Program Costs	$ 1,085	$ 1,415
Less: Earned Revenues (Note 19)	(6)	(616)
Net Cost of Energy Diversity	1,079	799
Environmental Impacts of Energy		
Program Costs	1,041	989
Less: Earned Revenues (Note 19)	(60)	(95)
Net Costs of Environmental Impacts of Energy	981	894
Energy Infrastructure		
Program Costs	3,930	3,951
Less: Earned Revenues (Note 19)	(4,146)	(4,313)
Net Cost of Energy Infrastructure	(216)	(362)
Energy Productivity Program Costs	496	470
Net Cost of Energy Security	2,340	1,801
Nuclear Security:		
Nuclear Deterrent Program Costs	6,851	6,671
Weapons of Mass Destruction Program Costs	1,539	1,377
Nuclear Propulsion Plants		
Program Costs	810	783
Less: Earned Revenues (Note 19)	(19)	(11)
Net Cost of Nuclear Propulsion Plants	791	772
Net Cost of Nuclear Security	9,181	8,820
Scientific Discovery and Innovation:		
Net Cost of Scientific Discovery and Innovation	4,004	3,734
Environmental Responsibility:		
Environmental Cleanup		
Program Costs	5,861	6,007
Less: Earned Revenues (Note 19)	(493)	(509)
Net Costs of Environmental Cleanup	5,368	5,498
Managing the Legacy Program Costs	57	62
Net Cost of Environmental Responsibility	5,425	5,560
Net Cost of Strategic Themes	20,950	19,915
OTHER PROGRAMS:		
Reimbursable Programs:		
Program Costs	3,529	3,398
Less: Earned Revenues (Note 19)	(3,521)	(3,385)
Net Cost of Reimbursable Programs	8	13
Other Programs: (Note 20)		
Program Costs	690	653
Less: Earned Revenues (Note 19)	(312)	(218)
Net Cost of Other Programs	378	435
Costs Applied to Reduction of Legacy Environmental Liabilities (Notes 14 and 21)	(5,573)	(6,207)
Costs Not Assigned (Note 22)	45,732	49,724
Net Cost of Operations (Note 23)	$ 61,495	$ 63,880

The accompanying notes are an integral part of these statements

U. S. Department of Energy
Consolidated Statements of Changes in Net Position

For Years Ended September 30, 2007 and 2006

($ in millions)

	FY 2007			
	Earmarked Funds	All Other Funds (Note 18)	Eliminations	Consolidated
CUMULATIVE RESULTS OF OPERATIONS:				
Beginning Balances	$ (1,345)	$ (179,661)	$ -	$ (181,006)
Change in Accounting Principle (Note 24)	333	622	-	955
Beginning Balances, as Adjusted	$ (1,012)	$ (179,039)	$ -	$ (180,051)
Budgetary Financing Sources:				
Appropriations Used	$ 36	$ 22,502	$ -	$ 22,538
Nonexchange Revenue	72	2	-	74
Donations and Forfeitures of Cash	-	12	-	12
Transfers - In/(Out) Without Reimbursement	(878)	9	-	(869)
Other Financing Sources (Non-Exchange):				
Donations and Forfeitures of Cash	4	-	-	4
Transfers - In/(Out) Without Reimbursement (Note 23)	48	144	-	192
Imputed Financing from Costs Absorbed by Others (Note 23)	2	1,744	-	1,746
Other	343	163	(472)	34
Total Financing Sources	$ (373)	$ 24,576	$ (472)	$ 23,731
Net Cost of Operations	(4,139)	(57,828)	472	(61,495)
Net Change	$ (4,512)	$ (33,252)	$ -	$ (37,764)
Total Cumulative Results of Operations	$ (5,524)	$ (212,291)	$ -	$ (217,815)
UNEXPENDED APPROPRIATIONS:				
Beginning Balances	$ 47	$ 9,864	$ -	$ 9,911
Budgetary Financing Sources:				
Appropriations Received (Note 23)	$ 5	$ 23,291	$ -	$ 23,296
Appropriations Transferred - In/(Out)	-	13	-	13
Other Adjustments	1	(1)	-	-
Appropriations Used	(36)	(22,502)	-	(22,538)
Total Budgetary Financing Sources	$ (30)	$ 801	$ -	$ 771
Total Unexpended Appropriations	$ 17	$ 10,665	$ -	$ 10,682
Net Position	$ (5,507)	$ (201,626)	$ -	$ (207,133)

	FY 2006 (Unaudited)			
CUMULATIVE RESULTS OF OPERATIONS:				
Beginning Balances	$ 3,264	$ (143,021)	$ -	$ (139,757)
Budgetary Financing Sources:				
Appropriations Used	$ 14	$ 22,706	$ -	$ 22,720
Nonexchange Revenue	60	2	-	62
Donations and Forfeitures of Cash	-	13	-	13
Transfers - In/(Out) Without Reimbursement	(216)	-	-	(216)
Other Financing Sources (Non-Exchange):				
Donations and Forfeitures of Cash	1	-	-	1
Transfers - In/(Out) Without Reimbursement (Note 23)	(611)	(15)	-	(626)
Imputed Financing from Costs Absorbed by Others (Note 23)	2	621	-	623
Other	502	11	(459)	54
Total Financing Sources	$ (248)	$ 23,338	$ (459)	$ 22,631
Net Cost of Operations	(4,361)	(59,978)	459	(63,880)
Net Change	$ (4,609)	$ (36,640)	$ -	$ (41,249)
Total Cumulative Results of Operations	$ (1,345)	$ (179,661)	$ -	$ (181,006)
UNEXPENDED APPROPRIATIONS:				
Beginning Balances	$ 10	$ 8,968	$ -	$ 8,978
Budgetary Financing Sources:				
Appropriations Received (Note 23)	$ 52	$ 23,847	$ -	$ 23,899
Appropriations Transferred - In/(Out)	-	17	-	17
Other Adjustments	(1)	(262)	-	(263)
Appropriations Used	(14)	(22,706)	-	(22,720)
Total Budgetary Financing Sources	$ 37	$ 896	$ -	$ 933
Total Unexpended Appropriations	$ 47	$ 9,864	$ -	$ 9,911
Net Position	$ (1,298)	$ (169,797)	$ -	$ (171,095)

The accompanying notes are an integral part of these statements

U. S. Department of Energy
Combined Statements of Budgetary Resources

For Years Ended September 30, 2007 and 2006

($ in millions)

	FY 2007	FY 2006 (Unaudited)
BUDGETARY RESOURCES:		
Unobligated balance, Brought Forward, October 1 (Note 25)	$ 4,159	$ 4,244
Recoveries of Prior Year Unpaid Obligations	52	47
Budget Authority:		
Appropriations (Note 25)	$ 24,616	$ 25,374
Borrowing Authority	315	270
Contract Authority	692	871
Spending Authority from Offsetting Collections:		
Earned:		
Collected	7,755	7,727
Change in Receivables from Federal Sources	(22)	16
Change in Unfilled Customer Orders:		
Advances Received	9	30
Without Advance from Federal Sources	124	(603)
Subtotal	$ 33,489	$ 33,685
Nonexpenditure Transfers, Net, Anticipated and Actual	117	(52)
Temporarily not Available Pursuant to Public Law	(257)	(266)
Permanently Not Available	(1,428)	(1,838)
Total Budgetary Resources (Note 25)	$ 36,132	$ 35,820
STATUS OF BUDGETARY RESOURCES:		
Obligations Incurred:		
Direct	$ 24,770	$ 24,701
Exempt from Apportionment	2,897	3,047
Reimbursable	4,385	3,908
Total Obligations Incurred (Notes 23 and 25)	$ 32,052	$ 31,656
Unobligated Balance:		
Apportioned	2,495	2,552
Exempt from Apportionment	50	32
Unobligated Balance Not Available (Notes 3 and 25)	1,535	1,580
Total Status of Budgetary Resources	$ 36,132	$ 35,820
CHANGE IN OBLIGATED BALANCE:		
Obligated Balance, Net:		
Unpaid Obligations, Brought Forward, October 1 (Note 25)	$ 18,196	$ 17,229
Less: Uncollected Customer Payments from Federal Sources, Brought Forward, October 1	(4,100)	(4,687)
Total Unpaid Obligated Balance, Net, October 1	$ 14,096	$ 12,542
Obligations Incurred (Note 25)	32,052	31,656
Less: Gross Outlays	(30,748)	(30,642)
Less: Recoveries of Prior Year Unpaid Obligations, Actual	(52)	(47)
Change in Uncollected Customer Payments from Federal Sources	(102)	587
	$ 15,246	$ 14,096
Obligated Balance, Net, End of Period:		
Unpaid Obligations (Notes 3 and 25)	$ 19,447	$ 18,196
Less: Uncollected Customer Payments from Federal Sources (Note 3)	(4,201)	(4,100)
Total, Unpaid Obligated Balance, Net, End of Period	$ 15,246	$ 14,096
NET OUTLAYS:		
Gross Outlays	$ 30,748	$ 30,642
Less: Offsetting collections	(7,764)	(7,757)
Less: Distributed Offsetting Receipts (Notes 23 and 25)	(2,926)	(3,264)
Net Outlays (Note 25)	$ 20,058	$ 19,621

The accompanying notes are an integral part of these statements

U. S. Department of Energy
Consolidated Statements of Custodial Activities

For Years Ended September 30, 2007 and 2006

($ in millions)

	FY 2007	FY 2006 (Unaudited)
SOURCES OF COLLECTIONS:		
Cash Collections: (Note 26)		
Interest	$ 13	$ 17
Federal Energy Regulatory Commission	82	44
Power Marketing Administration Custodial Revenue	532	545
Total Cash Collections	$ 627	$ 606
Accrual Adjustment	(5)	13
Total Custodial Revenue	$ 622	$ 619
DISPOSITION OF REVENUE:		
Transferred to Others:		
Department of the Treasury	(290)	(200)
Army Corps of Engineers	(31)	3
Bureau of Reclamation	(305)	(333)
Others	(7)	(5)
Decrease/(Increase) in Amounts to be Transferred	11	(84)
Net Custodial Activity	$ -	$ -

The accompanying notes are an integral part of these statements

— Notes to the Consolidated and Combined Financial Statements —

1. Summary of Significant Accounting Policies

A. Basis of Presentation

These consolidated and combined financial statements have been prepared to report the financial position and results of operations of the U.S. Department of Energy (the Department). The statements were prepared from the books and records of the Department in accordance with generally accepted accounting principles applicable to Federal entities.

B. Description of Reporting Entity

The Department is a cabinet level agency of the Executive Branch of the U.S. Government. The Department is not subject to Federal, state, or local income taxes. The Department's headquarters organizations are located in Washington, D. C. and Germantown, Maryland, and consist of an executive management structure that includes the Secretary; the Deputy Secretary; the Under Secretary of Energy; the Under Secretary for Nuclear Security/Administrator for The National Nuclear Security Administration; the Under Secretary for Science; Secretarial staff organizations; and program organizations that provide technical direction and support for the Department's principal programmatic missions. The Department also includes the Federal Energy Regulatory Commission (FERC), which is an independent organization responsible for regulating the transmission and sale of natural gas for resale in interstate commerce and for the transmission and wholesale of electricity in interstate commerce and the licensing of hydroelectric power projects.

The Department has a complex field structure comprised of operations offices, field offices, power marketing administrations (Bonneville Power Administration, Southeastern Power Administration, Southwestern Power Administration, and Western Area Power Administration), laboratories, and other facilities. The majority of the Department's environmental cleanup, energy research and development, and testing and production activities are carried out by major contractors. The contractors operate, maintain, or support the Department's Government-owned facilities on a day-to-day basis and provide other special work under the direction of DOE field organizations. The Department indemnifies these contractors against financial responsibility from nuclear accidents under the provisions of the Price-Anderson Act.

These contractors have unique contractual relationships with the Department. In most cases, their charts of accounts and accounting system are integrated with the Department's accounting system through a home office-branch office type of arrangement. Additionally, the Department is responsible for funding certain defined benefit pension plans, as well as postretirement benefits such as medical care and life insurance, for the employees of these contractors. As a result, the Department's financial statements reflect not only the costs incurred by these contractors, but also include certain contractor assets (e.g., employee advances and prepaid pension costs) and liabilities (e.g., accounts payable, accrued expenses including payroll and benefits, and pension and other actuarial liabilities) that would not be reflected in the financial statements of other Federal agencies that do not have these unique contractual relationships.

C. Basis of Accounting

Transactions are recorded on an accrual accounting basis and budgetary basis. Under the accrual method, revenues are recognized when earned and expenses are recognized when liabilities are incurred, without regard to receipt or payment of cash. Budgetary accounting facilitates compliance with legal constraints and controls over the use of Federal funds. All material intra-departmental balances and transactions have been eliminated in the Consolidated Balance Sheets, Consolidated Statements of Net Cost, Consolidated Statements of Changes in Net Position, and Consolidated Statements of Custodial Activities. The Combined Statements of Budgetary Resources are prepared on a combined basis and do not include intra-departmental eliminations.

Throughout these financial statements, assets, liabilities, earned revenue, and costs have been classified according to the type of entity with whom the transactions were made. Intragovernmental assets and liabilities are those from or to other Federal entities. Intragovernmental earned revenue represents collections or accruals of revenue from other Federal entities, and intragovernmental costs are payments or accruals to other Federal entities.

D. Fund Balance with Treasury

Funds with the Department of the Treasury (Treasury) primarily represent appropriated and revolving funds that are available to pay current liabilities and finance authorized purchases. Disbursements and receipts are processed by Treasury, and the Department's records are reconciled with those of Treasury (see Note 3).

E. Investments, Net

All investments are reported at cost net of amortized premiums and discounts as it is the Department's intent to hold the investments to maturity. Premiums and discounts are amortized using the effective interest yield method (see Note 4).

F. Accounts Receivable, Net

The amounts due for non-intragovernmental (non-Federal) receivables are stated net of an allowance for uncollectible accounts. The estimate of the allowance is based on past experience in the collection of receivables and an analysis of the outstanding balances (see Note 5).

G. Inventory, Net

Stockpile materials are recorded at historical cost in accordance with Statement of Federal Financial Accounting Standards (SFFAS) No. 3, Accounting for Inventory and Related Property, except for certain nuclear materials identified as surplus or excess to the Department's needs. These nuclear materials are recorded at their net realizable value (see Note 7).

H. General Property, Plant, and Equipment, Net

Property, plant, and equipment that are purchased, constructed, or fabricated in-house, including major modifications or improvements, are capitalized at cost. The Department's property, plant, and equipment capitalization threshold is $50,000 except for the power marketing administrations (PMAs) and FERC, which use thresholds ranging from $5,000 to $25,000. The capitalization threshold for internal use software is $750,000, except for the PMAs and FERC, which use thresholds ranging from $5,000 to $150,000 (see Note 8).

Costs of construction are capitalized as construction work in process. Upon completion or beneficial occupancy or use, the cost is transferred to the appropriate property account. Property, plant, and equipment related to environmental management facilities storing and processing the Department's environmental legacy wastes are not capitalized.

Depreciation expense is generally computed using the straight-line method. The units of production method is used only in special cases where applicable, such as depreciating automotive equipment on a mileage basis and construction equipment on an hourly use basis. The ranges of service lives are generally as follows:

- Structures and Facilities 25 – 50 years
- Automated Data Processing Software 3 – 7 years
- Equipment 5 – 40 years
- Land and land rights – duration of period or 50 years, whichever is less.

I. Liabilities

Liabilities represent amounts of monies or other resources likely to be paid by the Department as a result of a transaction or event that has already occurred. However, no liability can be paid by the Department absent an authorized appropriation. Liabilities for which an appropriation has not been enacted are, therefore, classified as not covered by budgetary resources (see Note 10), and there is no certainty that the appropriations will be enacted. Also, liabilities of the Department arising from other than contracts can be abrogated by the Government acting in its sovereign capacity.

J. Earmarked Funds

Earmarked funds are financed by specifically identified revenues, often supplemented by other financing sources, which remain available over time. These specifically identified revenues and other financing sources are required by statute to be used for designated activities, benefits or purposes, and must be accounted for separately from the Government's general revenues (see Note 18).

K. Accrued Annual, Sick, and Other Leave

Federal employees' annual leave is accrued as it is earned, and the accrual is reduced annually for actual leave taken. Each year, the accrued annual leave balance is adjusted to reflect the latest pay rates. To the extent that current or prior year appropriations are not available to fund annual leave earned but not taken, funding will be obtained from future financing sources. Sick leave and other types of non-vested leave are expensed as taken.

L. Retirement Plans

Federal Employees

There are two primary retirement systems for Federal employees. Employees hired prior to January 1, 1984, may participate in the Civil Service Retirement System (CSRS). On January 1, 1984, the Federal Employees Retirement System (FERS) went into effect pursuant to Public Law 99-335. Most employees hired after December 31, 1983, are automatically covered by FERS and Social Security. Employees hired prior to January 1, 1984, elected to either join FERS and Social Security or remain in CSRS. A primary feature of FERS is that it offers a savings plan to which the Department automatically contributes one percent of pay and matches any employee contribution up to an additional four percent of pay. For most employees hired since December 31, 1983, the Department also contributes the employer's matching share for Social Security. The Department does not report CSRS or FERS assets, accumulated plan benefits, or unfunded liabilities, if any, applicable to its employees. Reporting such amounts is the responsibility of the Office of Personnel Management and the Federal Employees Retirement System. The Department does report, as an imputed financing source (see Note 23) and a program expense, the difference between its contributions to Federal employee pension and other retirement benefits and the estimated actuarial costs as computed by the Office of Personnel Management. The PMAs make additional annual contributions to the U.S. Treasury to ensure that all postretirement benefit programs provided to their employees are fully funded and such costs are both recovered through rates and properly expensed.

Contractor Employees

Most of the Department's major contractors maintain a defined benefit pension plan under which they promise to pay employees specific benefits, such as a percentage of the final average pay for each year of service. The Department's cost under the contracts includes reimbursement of employer contributions to the pension plans. Amounts are calculated for employers to contribute to their pension plan to ensure the plan assets are sufficient or provide for accrued benefits of contractor employees. The level of contributions is dependent on plan provisions and actuarial assumptions about the future, such as interest rates, employee turnover and mortality, age of retirement, and compensation

increases. The Department's contractors also sponsor postretirement benefits other than pensions (PRB) consisting of predominantly post-retirement health care benefits which are generally funded on a pay-as-you-go basis. Since the Department is ultimately responsible for the allowable costs of funding the pension and PRB plans, it reports assets and liabilities for these plans (see Note 15).

M. Net Cost of Operations

Program costs are summarized in the Consolidated Statements of Net Cost by the strategic themes and goals identified in the Department's September 30, 2006, Strategic Plan. Program costs reflect full costs including all direct and indirect costs consumed by these strategic themes and goals. Full costs are reduced by exchange (earned) revenues to arrive at net operating cost (see Notes 19 and 20). The strategic themes and goals are summarized below.

Energy Security

- Energy Diversity - Increase our energy options and reduce dependence on oil, thereby reducing vulnerability to disruptions and increasing the flexibility of the market to meet U.S. needs.
- Environmental Impacts of Energy - Improve the quality of the environment by reducing greenhouse gas emissions and environmental impacts to land, water, and air from energy production and use.
- Energy Infrastructure - Foster a more flexible, more reliable, and higher capacity U.S. energy infrastructure.
- Energy Productivity - Cost-effectively improve the energy efficiency of the U.S. economy.

Nuclear Security

- Nuclear Deterrent - Transform the Nation's nuclear weapons stockpile and supporting infrastructure to be more responsive to the threats of the 21st Century.
- Weapons of Mass Destruction - Prevent the acquisition of nuclear and radiological materials for use in weapons of mass destruction and in other acts of terrorism.
- Nuclear Propulsion Plants – Provide safe, militarily effective nuclear propulsion plants to the U.S. Navy.

Scientific Discovery and Innovation

- Scientific Breakthroughs – Achieve the major scientific discoveries that will drive U.S. competitiveness and inspire and revolutionize our approaches to the Nation's energy, national security, and environmental quality challenges.
- Foundations of Science – Deliver the scientific facilities, train the next generation of scientists and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.
- Research Integration – Integrate basic and applied research to accelerate innovation and to create transformational solutions for energy and other U.S. needs.

Environmental Responsibility

- Environmental Cleanup – Complete cleanup of the contaminated nuclear weapons manufacturing and testing sites across the United States.
- Managing the Legacy – Manage the Department's post-closure environmental responsibilities and ensure the future protection of human health and the environment.

N. Revenues and Other Financing Sources

The Department receives the majority of the funding needed to perform its mission through Congressional appropriations. These appropriations may be used, within statutory limits, for operating and capital expenditures. In addition to appropriations, financing sources include exchange and non-exchange revenues, imputed financing sources, and custodial revenues.

Exchange and Non-Exchange Revenues

In accordance with Federal Government accounting standards, the Department classifies revenues as either exchange (earned) or non-exchange. Exchange revenues are those that derive from transactions in which both the Government and the other party receive value (see Note 19). Non-exchange revenues derive from the Government's sovereign right to demand payment, including fines and penalties. Non-exchange revenues also include interest earned on investments funded from amounts remaining from the privatization of the United States Enrichment Corporation (see Note 4). These revenues are not considered to reduce the cost of the Department's operations and are reported on the Consolidated Statements of Changes in Net Position.

Imputed Financing Sources

In certain instances program costs of the Department are paid out of the funds appropriated to other Federal agencies. For example, certain costs of retirement programs are paid by the Office of Personnel Management, and certain legal judgments against the Department are paid from the Judgment Fund maintained by Treasury. When costs that are directly attributable to the Department's operations are paid by other agencies, the Department recognizes these amounts on the Consolidated Statements of Net Cost. In addition, these amounts are recognized as imputed financing sources on the Consolidated Statements of Changes in Net Position (see Note 23).

Custodial Revenues

The Department collects certain revenues on behalf of others which are designated as custodial revenues. The Department incurs virtually no costs to generate these revenues, nor can it use these revenues to finance its operations. The revenues are returned to Treasury and others and are reported on the Consolidated Statements of Custodial Activities (see Note 26).

O. Use of Estimates

The Department has made certain estimates and assumptions relating to the reporting of assets and liabilities and the disclosure of contingent assets and liabilities to prepare these consolidated financial statements. Actual results could differ from these estimates.

P. Comparative Data

Certain FY 2006 amounts have been reclassified to conform to the FY 2007 presentation.

2. Non-Entity Assets (in millions)

	FY 2007	FY 2006
Intragovernmental		
Naval Petroleum Reserve Deposit Fund (Note 12)	$ 323	$ 323
Investments - Petroleum Pricing Violation Escrow Fund (Notes 4 and 13)	47	72
Subtotal	$ 370	$ 395
Investments - Petroleum Pricing Violation Escrow Fund (Notes 4 and 13)	202	210
Inventories - Department of Defense stockpile oil (Notes 7 and 13)	123	123
Other	-	18
Total non-entity assets	$ 695	$ 746
Total entity assets	129,984	125,306
Total assets	**$ 130,679**	**$ 126,052**

Assets in the possession of the Department that are not available for its use are considered non-entity assets.

Naval Petroleum Reserve Deposit Fund

The balance in this fund represents proceeds from the sale of the Naval Petroleum Reserve at Elk Hills that are being held until final disposition in accordance with the Decoupling Agreement. Approximately $288 million is being held for a contingency payment to Chevron, Inc., pending the outcome of equity finalization. The remaining $35 million is reserved for anticipated adjustments to Occidental's final payment and for possible reimbursement to the investment banker for an advance on its commission.

Petroleum Pricing Violation Escrow Fund

The Petroleum Pricing Violation Escrow Fund represents custodial receipts collected as a result of agreements or court orders with individuals or firms that violated petroleum pricing and allocation regulations during the 1970s. These receipts are invested in Treasury securities and certificates of deposit at minority-owned financial institutions pending determination by the Department as to how to distribute the fund balance. The investments are liquidated, as needed, to make payments from this fund.

3. Fund Balance with Treasury (in millions)

	FY 2007				
	Appropriated Funds	Revolving Funds	Special Funds	Other Funds	Total
Unobligated budgetary resources					
Available	$ 2,158	$ 168	$ 219	$ -	$ 2,545
Unavailable (Note 25)	15	1,476	44	-	1,535
Obligated balance not yet disbursed					
Unpaid obligations (Note 25)	16,302	2,460	685	-	19,447
Uncollected customer payments from Federal sources	(3,851)	(322)	(28)	-	(4,201)
Deposit fund and other liabilities	-	(3)	-	360	357
Other adjustments					
Appropriations temporarily not available pursuant to law, and contract authority	257	(694)	-	-	(437)
Unavailable receipt accounts	-	-	882	-	882
Budgetary resources invested in Treasury securities					
Nuclear Waste Fund	-	-	(108)	-	(108)
Uranium Enrichment D&D Fund	-	-	(188)	-	(188)
U.S. Enrichment Corporation revolving fund	-	(1,473)	-	-	(1,473)
Total FY 2007 fund balance with Treasury	**$ 14,881**	**$ 1,612**	**$ 1,506**	**$ 360**	**$ 18,359**

	FY 2006				
	Appropriated Funds	Revolving Funds	Special Funds	Other Funds	Total
Unobligated budgetary resources					
Available	$ 2,367	$ 95	$ 122	$ -	$ 2,584
Unavailable (Note 25)	39	1,441	100	-	1,580
Obligated balance not yet disbursed					
Unpaid obligations (Note 25)	15,115	2,452	628	1	18,196
Uncollected customer payments from Federal sources	(3,697)	(386)	(17)	-	(4,100)
Deposit fund liabilities	-	-	-	377	377
Other adjustments					
Appropriations temporarily not available pursuant to law, and contract authority	257	(871)	-	-	(614)
Unavailable receipt accounts	-	-	881	-	881
Budgetary resources invested in Treasury securities					
Nuclear Waste Fund	-	-	(183)	-	(183)
Uranium Enrichment D&D Fund	-	-	(110)	-	(110)
Pajarito Plateau Homesteaders Compensation Fund	-	-	(8)	-	(8)
U.S. Enrichment Corporation revolving fund	-	(1,414)	-	-	(1,414)
Total FY 2006 fund balance with Treasury	**$ 14,081**	**$ 1,317**	**$ 1,413**	**$ 378**	**$ 17,189**

4. Investments, Net (in millions)

	FY 2007				
	Face	Unamortized Premium (Discount)	Investments Net	Unrealized Market Gains (Losses)	Market Value
Intragovernmental Non-Marketable					
Nuclear Waste Fund	$ 39,434	$ (19,971)	$ 19,463	$ 1,179	$ 20,642
D&D Fund	4,623	50	4,673	20	4,693
U.S. Enrichment Corporation	1,502	(4)	1,498	-	1,498
Petroleum Pricing Violation Escrow Fund	47	-	47	-	47
Subtotal	$ 45,606	$ (19,925)	$ 25,681	$ 1,199	$ 26,880
Petroleum Pricing Violation Escrow Fund	202	-	202	-	202
Total FY 2007 investments	**$ 45,808**	**$ (19,925)**	**$ 25,883**	**$ 1,199**	**$ 27,082**

	FY 2006				
	Face	Unamortized Premium (Discount)	Investments Net	Unrealized Market Gains (Losses)	Market Value
Intragovernmental Non-Marketable					
Nuclear Waste Fund	$ 36,481	$ (18,529)	$ 17,952	$ 1,393	$ 19,345
D&D Fund	4,228	82	4,310	(68)	4,242
U.S. Enrichment Corporation	1,426	(1)	1,425	-	1,425
Petroleum Pricing Violation Escrow Fund	72	-	72	-	72
Pajarito Plateau Homesteaders Compensation Fund	8	-	8	-	8
Subtotal	$ 42,215	$ (18,448)	$ 23,767	$ 1,325	$ 25,092
Petroleum Pricing Violation Escrow Fund	210	-	210	-	210
Total FY 2006 investments	**$ 42,425**	**$ (18,448)**	**$ 23,977**	**$ 1,325**	**$ 25,302**

Pursuant to statutory authorizations, the Department invests monies in Treasury securities and commercial certificates of deposit that are secured by the Federal Deposit Insurance Corporation. The Department's investments primarily involve the Nuclear Waste Fund (NWF) and the Uranium Enrichment Decontamination and Decommissioning (D&D) Fund. Fees paid by owners and generators of spent nuclear fuel and high-level radioactive waste and fees collected from domestic utilities are deposited into the respective funds. Funds in excess of those needed to pay current program costs are invested in Treasury securities.

Upon privatization of the United States Enrichment Corporation (USEC) on July 28, 1998, OMB and Treasury designated the Department as successor to USEC for purposes of disposition of balances remaining in the USEC Fund. These funds are invested in Treasury securities.

The Federal Government does not set aside assets to pay for expenditures associated with the funds for which the Department holds Treasury securities. These Treasury securities are an asset to the Department and a liability to Treasury. Because the Department and Treasury are both parts of the Government, these assets and liabilities offset each other from the standpoint of the Government as a whole. For this reason, they do not represent an asset or a liability in the U.S. Government-wide financial statements.

Treasury securities provide the Department with authority to draw upon the U.S. Treasury to make expenditures, subject to available appropriations and OMB apportionments. When the Department requires redemption of these securities, the Government finances those expenditures out of accumulated cash balances by raising taxes or other receipts, by borrowing from the public or repaying less debt, or by curtailing other expenditures. This is the same way the Government finances all other expenditures.

5. Accounts Receivable, Net (in millions)

	FY 2007			FY 2006		
	Receivable	Allowance	Net	Receivable	Allowance	Net
Intragovernmental	$ 575	$ -	$ 575	$ 615	$ -	$ 615
Nuclear Waste Fund	3,308	-	3,308	3,153	-	3,153
Uranium Enrichment D&D Fund	-	-	-	181	-	181
Power marketing administrations	519	(41)	478	559	(42)	517
Petroleum Pricing Violation Escrow Fund	2	-	2	2	-	2
Credit programs	49	-	49	51	(26)	25
Other	145	(43)	102	181	(39)	142
Subtotal	$ 4,023	$ (84)	$ 3,939	$ 4,127	$ (107)	$ 4,020
Total accounts receivable	**$ 4,598**	**$ (84)**	**$ 4,514**	**$ 4,742**	**$ (107)**	**$ 4,635**

Intragovernmental accounts receivable primarily represent amounts due from other Federal agencies for reimbursable work performed pursuant to the Economy Act, Atomic Energy Act, and other statutory authority, as well as interest earned on investments held in Treasury securities.

Non-intragovernmental receivables primarily represent amounts due for NWF fees. NWF receivables are supported by contracts and agreements with owners and generators of spent nuclear fuel and high-level radioactive waste that contribute resources to the fund. Other receivables due from the public include reimbursable work billings and other amounts related to trade receivables, and other miscellaneous receivables.

6. Regulatory Assets (in millions)

	FY 2007	FY 2006
Intragovernmental		
Refinanced and additional appropriated capital	$ 5,456	$ 5,476
Non-operating regulatory assets	3,887	3,928
Investor owned utilities exchange benefits	885	1,207
Conservation and fish and wildlife projects	377	401
Other regulatory assets	487	425
Subtotal	$ 5,636	$ 5,961
Total regulatory assets	**$ 11,092**	**$ 11,437**

The Department's power marketing administrations (PMAs) record certain amounts as assets in accordance with Statement of Financial Accounting Standards (SFAS) No. 71, *Accounting for the Effects of Certain Types of Regulation*. These rate actions can provide reasonable assurance of the existence of an asset, reduce or eliminate the value of an asset, or impose a liability on a regulated enterprise.

In order to defer incurred costs under SFAS No. 71, a regulated entity must have the statutory authority to establish rates that recover all costs, and those rates must be charged to and collected from customers. If BPA's rates should become market-based, SFAS No. 71 would no longer be applicable, and all of the deferred costs under that standard would be expensed.

Refinanced and Additional Appropriated Capital

The BPA Refinancing Section of the Omnibus Consolidated Recisions and Appropriations Act of 1996 (Refinancing Act), 16 U.S.C. 838(l), required that the outstanding balance of the Federal Columbia River Power System (FCRPS) be reset and assigned market rates of interest prevailing as of September 30, 1996. This resulted in a determination that the principal amount of appropriations should equal the present value of the principal and interest that would have been paid to the U.S. Treasury in the absence of the Refinancing Act, plus $100 million. These appropriations include the unpaid balance of capital appropriations of the power generating assets of the U.S. Army Corps of Engineers (Corps) and the Bureau of Reclamation associated with the FCRPS as well as additional capital investment post- Refinancing Act. The Corps and the Bureau of Reclamation continue to own and operate these assets, with BPA having the responsibility to recover the

costs of the assets from power ratepayers. BPA established an intragovernmental regulatory asset representing the repayment amount of the transmission and power generating assets that will be recovered in BPA rates. This regulatory asset is being amortized on a straight-line method over the service lives of the assets. BPA recognized annual amortization costs of $91 million as of September 30, 2007, and $120 million as of September 30, 2006 (unaudited). The Consolidated Balance Sheets include a regulatory asset and an offsetting related debt (see Note 11).

Non-Operating Regulatory Assets

BPA has acquired all or part of the potential generating capability of three terminated nuclear facilities and one hydro project that are not providing power. The contracts to acquire the generating capability of these projects require BPA to pay all or part of the annual projects' budgets, including maintenance expense and debt service. These projects' costs are recovered through BPA's rates. The Consolidated Balance Sheets include a regulatory asset and offsetting related debt (see Note 11).

Investor Owned Utilities (IOU) Exchange Benefits

The IOU Exchange Benefits reflect costs that will be recovered through rates. As provided for in the Northwest Power Act, beginning in 1982 BPA entered into residential exchange contracts with most of its electric utility customers. These contracts resulted in payments to the utilities if a utility's average system cost exceeded BPA's priority firm rate on the "exchanged" power. These payments were required to be passed through to the utilities' qualified residential and small-farm customers.

BPA entered into certain agreements, as amended, with the Northwest IOUs to settle BPA's statutory obligation to provide benefits under the Residential Exchange Program for specified periods that began October 1, 2001. Although the amended agreements settled disputes with the IOUs concerning the levels of exchange benefits, in May 2007 based on lawsuits presented to the Ninth Circuit Court of Appeals, the Court ruled these agreements were inconsistent with the requirements established in the Northwest Power Act. In addition, in a related lawsuit the Court ruled that BPA did not allocate the cost of the amended agreements appropriately and remanded rates to BPA. As a result of the Court ruling, in May 2007 BPA suspended IOU payments under these agreements of approximately $28 million per month.

The Residential Exchange Program continues to be a requirement of the Northwest Power Act. Efforts are underway to develop a within-region solution to issues and to restore appropriate benefits under the Program. BPA expects any proposed solution to require initiation of a formal rate setting process sometime in fiscal year 2008. Until the uncertainty about the level of the future BPA obligations under the Residential Exchange Program is reduced, the financial statements will continue to reflect the obligations at levels associated with the settlement agreements.

Conservation and Fish and Wildlife Projects

Conservation measures consist of the costs of capitalized conservation measures and are amortized over periods from 5 to 20 years. Fish and wildlife measures consist of the costs of capitalized fish and wildlife projects and are amortized over a period of 15 years.

Other Regulatory Assets

Other regulatory assets consist of BPA deferred expenses where the costs are included in rates charged to customers. These assets primarily include direct service industry benefits that will be recovered in rates; decommissioning and site restoration costs reflecting amounts to be recovered in future rates for funding the Trojan asset retirement obligation liability; settlements reflecting agreements or proposed settlements stemming from litigation; conservation related to programs sponsored by BPA; spacer dampers on transmission lines; and capital bond premiums, which represent the deferred losses related to refinanced debt and are amortized over the life of the new debt instruments.

7. Inventory, Net

Inventory includes stockpile materials consisting of crude oil held in the Strategic Petroleum Reserve (SPR) and the Northeast Home Heating Oil Reserve, nuclear materials, highly enriched uranium, and other inventory consisting primarily of operating materials and supplies.

Strategic Petroleum Reserve

The SPR consists of crude oil stored in salt domes, terminals, and pipelines. As of September 30, 2007, and September 30, 2006, the Reserve contained crude oil with a historical cost of $19,340 million and $19,095 million, respectively. The Reserve provides a deterrent to the use of oil as a political instrument and provides a response mechanism should a disruption occur. Included in the SPR is six million barrels of crude oil held for future Department of Defense (DoD) use. The FY 1993 Defense Appropriations Act authorized the Department to acquire, transport, store, and prepare for ultimate drawdown of crude oil for DoD. The crude oil purchased with DoD funding is commingled with the Department's stock and is valued at its historical cost of $123 million at September 30, 2007, and September 30, 2006 (see Notes 2 and 13).

Northeast Home Heating Oil Reserve

The Northeast Home Heating Oil Reserve was established in FY 2000 pursuant to the Energy Policy and Conservation Act. The Reserve contains petroleum distillate in the New England, New York, and New Jersey geographic areas valued at historical costs of $75 million as of September 30, 2007, and $77 million as of September 30, 2006.

Nuclear Materials

Nuclear materials include weapons and related components, including those in the custody of the DoD under Presidential Directive, and materials used for research and development purposes. Certain surplus plutonium carried at zero value (a provision for disposal is included in environmental liabilities) has significant arms control and nonproliferation value and is instrumental to the U.S. in ensuring that Russia continues toward the disposition of its weapons-grade plutonium.

The Department has inventories amounting to a total of 17,596 metric tons of uranium (MTU) as hexafluoride as of the end of FY 2007. This total can be divided into three separate stockpiles. First, the Department in 1996 received from USEC a transfer of 5,521 MTU associated with the natural uranium component of low enriched uranium (LEU) delivered under the U.S. and Russia Highly Enriched Uranium (HEU) Purchase Agreement in 1995 and 1996. About 1,079 MTU remains in the Department's inventories as a result of: (1) 2,228 MTU transferred consistent with section 3112 of the USEC Privatization Act between 1996 and 2001; (2) 1,105 MTU transferred to USEC for sale in FY 2005 and FY 2006; (3) 906 MTU sold by the Department in FY 2006 (see Notes 4 and 19); and (4) 200 MTU sold in FY 2007 using the proceeds for the technetium cleanup program. In addition to the 1,079 MTU, the Department received 361 MTU of Russian origin from the Tennessee Valley Authority (TVA) in return for the Department providing a similar quantity of U.S. origin uranium under a prior agreement with TVA.

The second stockpile of uranium, amounting to 11,000 MTU, was purchased from Russia for $325 million consistent with Public Law 105-277. This material is the natural uranium component of LEU delivered under the U.S. and Russia HEU Agreement in 1997 and 1998. Final disposition of the material cannot occur until after March 2009 based upon an international agreement between the U.S. and Russia that requires the Department to maintain a 22,000 MTU stockpile and restricts the entry of the uranium into the commercial market until after March 2009.

The third stockpile of uranium consists of U.S. origin uranium of 5,156 MTU, the majority of which is also restricted from sale into the commercial market until after March 2009. Sampling and analysis indicate that a portion of the Department's stockpile of uranium hexafluoride contains technetium exceeding nuclear fuel specifications. This uranium is currently being processed to meet commercial specifications. About 3 MTU remain unrecoverable as cylinder heels from the technetium cleanup program and is included in the 5,156 MTU. Based on current market data, the carrying value of this material is not impaired as of September 30, 2007. Approximately 361 MTU of U.S. origin uranium was provided to TVA in return for a similar quantity of Russian origin uranium provided by TVA to the Department.

The nuclear materials inventory includes numerous items for which future use and disposition decisions have not been made. Decisions for most of these items will be made through analysis of the economic benefits and costs, and the environmental impacts of the various use and disposition alternatives. The carrying value of these items is not significant to the nuclear materials stockpile inventory balance. The Department will recognize disposition liabilities and record the material at net realizable value when disposal as waste is identified as the most likely alternative and disposition costs can be reasonably estimated. Inventory values are reduced by costs associated with decay or damage.

Highly Enriched Uranium

The Nuclear Weapons Council declared in December 1994, leading to the Secretary of Energy's announcement in February 1996, that 174.3 metric tons (MT) of the Department's HEU were excess to national security needs. Most of this material (about 156 MT) will be blended for sale as LEU and used over time as commercial or research nuclear reactor fuel to recover its value. The remaining portion (about 18 MT) of the material is already in the form of irradiated fuel or other waste forms and will be disposed of directly as waste. In November 2005, the Secretary of Energy declared that an additional 200 MT of HEU will never again be used as fissile material in nuclear weapons. Out of the 200 MT, approximately 20 MT will be down blended to LEU for use in commercial or research reactors, 20 MT will be used for research and 160 MT will be provided to Naval Reactors for programmatic use. Approximately 20% of the Naval Reactors material is expected to be rejected by Naval Reactors and re-designated for down-blending and sale as LEU fuel. Down-blending of this material will occur over the next 25 to 50 years.

8. General Property, Plant, and Equipment, Net (in millions)

	FY 2007			FY 2006		
	Acquisition Costs	Accumulated Depreciation	Net Book Value	Acquisition Costs	Accumulated Depreciation	Net Book Value
Land and land rights	$ 1,612	$ (767)	$ 845	$ 1,564	$ (753)	$ 811
Structures and facilities	35,545	(23,050)	12,495	33,665	(22,312)	11,353
Internal use software	457	(237)	220	471	(203)	268
Equipment	16,151	(10,682)	5,469	15,796	(10,563)	5,233
Natural resources	65	(16)	49	65	(16)	49
Construction work in process	5,788	-	5,788	6,408	-	6,408
Total property, plant, and equipment	**$ 59,618**	**$ (34,752)**	**$ 24,866**	**$ 57,969**	**$ (33,847)**	**$ 24,122**

9. Other Non-Intragovernmental Assets (in millions)

	FY 2007	FY 2006
Purchased generating capability	2,465	2,435
Prepaid pension plan costs (Note 15)	1,918	868
Oil due from others	119	83
Prepayments and advances	95	63
Other	$ 435	$ 415
Total other non-intragovernmental assets	**$ 5,032**	**$ 3,864**

Purchased Generating Capability

Through contracts, BPA has acquired all of the generating capability of one nuclear power plant and one hydroelectric project. The contracts require BPA to pay operating expenses and debt service for these facilities. The Consolidated Balance Sheets include an offsetting, related debt for these amounts.

Oil Due from Others

The Department has a Royalty-In-Kind exchange arrangement with the Department of the Interior's Mineral Management Service (MMS) to receive crude oil from Gulf of Mexico Federal offshore leases. The oil from the MMS offshore leases was exchanged for other crude oil (exchange oil) to be delivered to the SPR. As a result of companies deferring the delivery of some of the exchange oil, the Department earns additional oil as a premium. The value of the exchange and premium barrels due was $119 million as of September 30, 2007.

Due to Hurricane Katrina, the SPR contracted with six oil companies to loan SPR oil in exchange for the return of contracted plus premium barrels related to the exchange. In June 2006, the SPR delivered 750,000 barrels of oil from the reserve in exchange for 772,400 barrels to be returned back to the reserve by October 2006. As of September 30, 2007 all of the oil has been returned.

Industry Position on Disposition of DOE's Nuclear Fuel Inventory

Principles agreed:

1) Material is to be sold only to those entities possessing a US NRC license.

2) DOE will establish a Strategic Reserve of 20 million pounds U3O8 equivalent as LEU at 4.95 w/o. DOE will establish procedures, with input from the industry, that govern access to the strategic stockpile. Releases from stockpile should only be authorized in cases of national energy emergency.

3) 20 million pounds U3O8 equivalent will be made available for initial cores of new reactor build projects on a first come, first served basis at fair market value. In order to qualify for the initial core material a utility must have submitted a COL application to the NRC and the NRC must have agreed to review the application.

4) An Advisory Committee of industry participants will be established to advise and assist DOE (or to oversee DOE's performance) with respect to DOE's management of the uranium sales program.

5) DOE sales of natural uranium on an annual basis will follow the schedule in item 8 (natural U3O8 equivalent) and no more than 50% of the annual quantity will be sold under long-term contracts. DOE may begin to place material under contracts with deliveries beginning in 2008.

6) Should DOE barter material for services, any material sold by the recipient, shall be sold at fair market value and considered a part of DOE's annual sales quantity for that year.

7) The industry will cooperate with DOE to lobby for Receipt Authority for the revenues derived from the sale of DOE uranium.

8) DOE's annual targeted delivery quantities are presented in the following table:

Year	Million lbs Natural U3O8
2008	1.06
2009	1.06
2010	2.13
2011	3.12
2012	4.22
2013	5.3
2014	5.3

9) Any program sales beyond 2014 shall be reviewed by the Advisory Committee in 2011.

EXHIBIT
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