

Date Received: 11/15/95  
Comment ID: P0016  
Name: Katy Proctor  
Address: No Address Given

Transcription:

I was just calling about the concerns of the uranium being shipped in, and we are very concerned with that. So call us. I'm Katy Proctor, across the river from you, at 845-8421 area code 804. Thank you.

20.001

20.001: As with all hazardous materials, uranium is regulated to control potential risk. The quantity of uranium that would be shipped to or held at the B&W site would never exceed the safe limits authorized by the Department of Transportation or NRC. As explained in Section 4.4 and Appendix G of the HEU Final EIS, the Department of Transportation-specification packaging used for shipping HEU is specifically designed and tested to withstand transport accidents. DOE's 40-year record without an injury from a radioactive release testifies to the high level of safety demanded in transporting these materials.

QUATMANN, VICKI, LAKE CITY, TN  
PAGE 1 OF 1

Vicki Quatmann  
506 Old Lake City Hwy  
Lake City, Tennessee 37769  
Phone and Fax (423)426-9435  
Voice Mail (303)754-7524

1/23/96

Dear People at the Department of Energy,

I understand that there is a move afoot to make highly enriched uranium into nuclear reactor fuel. I am writing to register my overwhelming opposition to this intention. Why would anyone want to create any more of the radioactive waste that we have no way of disposal safely??? We have enough on our hands to keep us busy worrying for the next century.

10.024

Further, making highly enriched uranium into nuclear reactor fuel will, of course, make plutonium— a violation of our nonproliferation goals.

Finally, my understanding is that the DOE hasn't begun to explore options for storing downblended uranium. My own feeling is that we should make serious efforts to downblend all highly enriched uranium that is surplus so that it can't be used in weapons.

09.018  
10.003

Count me among those who do NOT want any production processes to make the furtherance of nuclear proliferation possible.

Thank you

*Vicki Quatmann*

10.024: The spent fuel that would be created as a consequence of commercial use of LEU fuel (derived from surplus HEU) in reactors would replace spent fuel that would be created in any case from natural uranium-derived fuel. Hence, no incremental spent fuel would result from this program. Although spent fuel contains Pu, because of the high level of radioactivity of spent fuel, it is extremely difficult and costly to separate the Pu. Thus, in accordance with recommendations of the National Academy of Sciences, it is the policy of the United States to make weapons-usable fissile materials at least as proliferation resistant as spent fuel from commercial nuclear reactors.

09.018: The Department of Energy does not consider the option of blending surplus HEU for extended storage reasonable because it would delay beneficial re-use of the material; delay recovery of the economic value of the material; add storage costs; reduce net revenues in the near term; not meet all aspects of the purpose and need of the proposed action; and be practically applicable without additional construction to only a small portion (20 t or approximately 40 t if a solidification facility is proposed and constructed at or near SRS) of the current surplus inventory.

10.003: Comment noted.

Date Received: 01/16/96  
Comment ID: P0051  
Name: Robert Randall  
Address: Brunswick, Georgia

Transcription:

Yes, hello, this is Robert Randall, I'm calling from Brunswick, Georgia. I just wanted to call and first I want to note that I find it amazing that we now have surplus highly enriched uranium when we were once told that we needed to make more of the stuff, same thing with surplus plutonium. Because we seem to always have surpluses, I think it's a very bad idea to make this highly enriched uranium into nuclear reactor fuel. We simply don't need to do something that's going to create even more plutonium, which we've already got too much of and can't figure out what to do. We need to down blend the highly enriched uranium. Make sure that it cannot ever be used in weapons. We need to do that ourselves unilaterally and work even harder of course, to get an international agreement to do that. It's the only way we're going to be able to stop proliferation. If you follow your plans to turn it into nuclear reactor fuel, proliferation is going to be inevitable. That's my comment. Thank you.

10.024  
10.023  
03.020  
10.024  
cont.

**10.024:** The spent fuel that would be created as a consequence of commercial use of LEU fuel (derived from surplus HEU) in reactors would replace spent fuel that would be created in any case from natural uranium-derived fuel. Hence, no incremental spent fuel would result from this program. Although spent fuel contains Pu, because of the high level of radioactivity of spent fuel, it is extremely difficult and costly to separate the Pu. Thus, in accordance with recommendations of the National Academy of Sciences, it is the policy of the United States to make weapons-usable fissile materials at least as proliferation resistant as spent fuel from commercial nuclear reactors.

**10.023:** Existing facilities analyzed in the HEU EIS have sufficient capability to blend down all surplus HEU to LEU in a reasonable timeframe. However, DOE does not anticipate being able to make much more than about 8 t per year available for blending. Therefore, DOE considers that it will likely take 15 to 20 years to blend the entire surplus HEU inventory.

**03.020:** The United States has begun to subject its stockpiles of surplus weapons-usable fissile materials to IAEA controls. There is some HEU under IAEA safeguards at the Y-12 Plant, as well as some Pu at the Hanford and Rocky Flats sites. It is DOE's intent to make additional quantities of surplus material subject to international controls to the maximum extent possible.

RUNDLE, BOB, KNOXVILLE, TN  
PAGE 1 OF 2

January 4, 1993

DOE/Fissile Materials Disposition  
c/o SAIC/HEU EIS  
Box 23786  
Washington, DC 20028-3786

Greetings:

I strongly object to the idea of making highly enriched uranium into nuclear reactor fuel. It is hard to believe that our government at this time of budget restraints and world peace is considering actions which are costly, have the potential of adding to our already overwhelming lead in nuclear weapons, violate our nonproliferation goals, and add to our unsolved radioactive waste problem. It is hard to imagine a governmental policy that has more negatives attached to it.

10.024

I urge your support for these policies instead:

- international controls on all nuclear materials
- downblending all highly enriched uranium so it cannot be used in weapons
- creating the capacity to downblend all uranium declared surplus in ten years


03.020

10.023

Enclosed is a copy of a letter I recently sent to our local paper that expands on the nuclear policy issue.

Thank you for your consideration.

Sincerely yours,

  
Bob Rundle  
1318 N. Briscoe Cir.  
Knoxville, TN 37912

cc President Clinton

10.024: The spent fuel that would be created as a consequence of commercial use of LEU fuel (derived from surplus HEU) in reactors would replace spent fuel that would be created in any case from natural uranium-derived fuel. Hence, no incremental spent fuel would result from this program. Although spent fuel contains Pu, because of the high level of radioactivity of spent fuel, it is extremely difficult and costly to separate the Pu. Thus, in accordance with recommendations of the National Academy of Sciences, it is the policy of the United States to make weapons-usable fissile materials at least as proliferation resistant as spent fuel from commercial nuclear reactors.

03.020: The United States has begun to subject its stockpiles of surplus weapons-usable fissile materials to IAEA controls. There is some HEU under IAEA safeguards at the Y-12 Plant, as well as some Pu at the Hanford and Rocky Flats sites. It is DOE's intent to make additional quantities of surplus material subject to international controls to the maximum extent possible.

10.023: Existing facilities analyzed in the HEU EIS have sufficient capability to blend down all surplus HEU to LEU in a reasonable timeframe. However, DOE does not anticipate being able to make much more than about 8 t per year available for blending. Therefore, DOE considers that it will likely take 10 to 15 years to blend the entire surplus HEU inventory.

Disposition of Surplus Highly  
Enriched Uranium Final EIS

December 28, 1995

Editor, News Sentinel  
208 W. Church St.  
Knoxville, TN 37902

Re: Letters

Greetings:

The headline for the 12-15-95 letter by Mike Stabin, "Anti-nuclear activists putting society at risk", should take a prize for the most ironic and misleading headline of 1995. Mr. Stabin's letter focuses on minor parts of the nuclear debate: risks associated with low level radiation, nuclear power generation and uses in medicine. The critical issue of our time is how to deal with nuclear weapons. The recent demonstrations in France by "nuclear activists" stemming from that country's nuclear tests had little to do with these minor issues and everything to do with this critical one.

Because of its awesome and unimaginable nature, the usual response to the possibility of nuclear war is denial. Hence it is much easier to focus on the fringe issues and continue to rely on such illogical policies as deterrence to keep us "safe". The deterrence approach says if I have enough weapons, I will deter anyone from attacking me. This usually does not work on the personal level. At the nuclear level deterrence is self-destructive. This approach of course grew out of the cold war with the Soviets. Every administration since Hiroshima has endorsed it even though aware of its fundamental flaw: if we are attacked with nuclear bombs, even in a "limited" war, our stockpile of 8000 nuclear arms is useless. The effects from the attack will be enough to destroy us, our attackers as well as everyone else! It is a shame that Washington does not do more to publicize this.

In fact our huge stockpile serves to create more danger for us. We model for the world that one way to be more powerful is to increase or develop nuclear weapons. The danger of atomic weapons increases as all nations seek to be more powerful.

The deterrence policy also contains budetary problems. In this time of efforts to balance the budget, it is hard to believe that the Department of Energy is planning on building more nuclear weapons and the expensive equipment to produce more tritium gas (to replace that which is deteriorating in existing weapons). And we are looking for places to save money!

We should be working much harder toward the only policy about nuclear weapons that makes sense: their reduction and control. If there ever was a time for all nations in the nuclear club to begin releasing their death grip on the policy of deterrence, it is while tensions are lowered. I'm afraid your headline only adds to our denial. Since the United States has an overwhelming lead in nuclear weapons, we have the primary responsibility to lead the world in developing sane policies about them. "Nuclear activists" are the primary group around the world that are trying to reduce the nuclear threat.

Sincerely yours,  
*Bob Rundle*  
Bob Rundle  
1318 N. Bliscoe Cir.  
Knoxville, TN 37912  
687-9060

Comment Documents  
and Responses

SANFORD, CHARLES S., NASHVILLE, TN  
PAGE 1 OF 1

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> #addr2 =  
> #city = nashville  
> #state = tn  
> #zip = 37212  
> #phone = (615) 383-6428  
> #fax =  
> #email =  
> #subject = HEU EIS

The emphasis here and, apparently, in the EIS is that of co-joint (ignore "non-proliferation") commercial utilization. In contrast, I believe that maximum national economic gain should supercede. For example: short term treasury cashflow is not necessarily worth other economic losses. Commercial versus economic should be carefully analyzed. A commercial operation will not necessarily have the welfare of the state as its highest priority. As previously stated - foreign sales. Furthermore, a blend-down to less than 4% with a higher throughput greater the 46 year processing rate (1%) material will yield more jobs. Restricting the use of any commercial grade materials will neutralize imports. And forbidding export will protect US energy production costs while denying (e.g.) Pacific Rim nations access to nuclear power production. Presuming that sales of US manufactured (or US design) reactors is the end result of the "commercial" goal of the selected alternative, then the job loss to the US (in terms of foreign competition in manufacturing) should be considered with full economic impact which is not necessarily commercial impact. One includes the other, but not vice versa. bye

06.006

06.006: There is no connection between the proposed action (blending surplus HEU down to LEU for commercial use or waste disposal) and the sale of reactors. Nuclear fuel derived from surplus HEU would simply displace LEU derived from natural uranium and is expected to have no impact on the economics or operation of nuclear power plants. This program does not propose to entrust the welfare of the State to "commercial operations." Commercial operations are expected to be involved in the blending of surplus HEU, and in the use of the resultant nuclear fuel, but would in no way determine the policy aspects of the surplus HEU disposition program.

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> #email =  
> #subject = HEU EIS

the ratio, volumes and quantities of materials to be processed (down-blended) is "classified". Surely, the environmental impact must, likewise, be classified. Unless production throughputs of materials at sites are factually known, then the "HEU EIS" is a "carte blanche" document to which public comments can only be generically given. More specificity would be appreciated for an informed opinion; otherwise, the DOE should wait until the materials are declassified so that more public information is available. One must presume that the driving force for the HEU EIS is the release of materials for the enrichment corporations stock offering in the Spring. It is almost too obvious. Is DOE prepared for the consequences of transferring public assets to a public corporation; especially when the public is denied knowledge of the composition of those assets. Perhaps I am wrong and this is a simple case of DOE not knowing themselves, but being required to submit draft doc for comment. byc

29.002

29.002: The purpose and need for the HEU Final EIS is for the United States to provide leadership in addressing global nonproliferation concerns regarding surplus HEU and to encourage reciprocal actions abroad.

On February 6, 1996, the Secretary of Energy declassified additional information about the forms, locations, and quantities of surplus HEU. That information is provided in Figure 1.3-1, and the relevant data is reflected in several revisions to the HEU Final EIS.

The HEU Final EIS explains that decisions as to where specific batches of HEU will be processed are expected to be based largely on business considerations and may involve USEC, other private entities that may buy surplus HEU for blending, or DOE. While the proposed transfer to USEC of 50 t of HEU is considered as a component of all the commercial use alternatives (3 through 5) in the EIS, the EIS covers the disposition of much more material (up to 200 t).

SANFORD, CHARLES S., NASHVILLE, TN  
PAGE 1 OF 1

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> #email =  
> #subject = HSU EIS

1. Price constraints on a market will affect foreign sales and disposition.  
These sales will influence foreign electric costs such that product  
competition will costs domestic jobs and raise social welfare costs.  
2. Total life-cycle costs should include final disposition of potential  
recycled HEU reactor fuels.  
3. The less than 4% blend-down will position the US on the "moral" high,  
for what it's worth.  
4. Are EPA comments to draft EIS available?

04.001  
16.006  
10.018  
32.012

thank you

04.001: The Department of Energy intends to sell uranium at measured rates to avoid significant effects on market prices.

16.006: Including spent fuel disposal costs in the cost analysis for this program would be justified only if the spent fuel were in addition to that which would be generated in the absence of the program, which is not the case.

10.018: Comment noted.

32.012: Comments submitted by the EPA and DOE's responses to those comments are presented in this *Comment Analysis and Response Document*.



Dept. of Energy:

Jan 9, 1996

We do not support making highly enriched uranium into nuclear reactor fuel because:

1. We have no solution for getting rid of the highly toxic & radioactive waste from it.

10.024

2. it will create plutonium, a violation of our non-proliferation goals.

3. they have not adequately explored all options, including storing & blending uranium.

09.018

We do support:

- blending all highly enriched uranium so that it can't be used in weapons,

10.023

- developing the capacity to blend all uranium declared surplus in 10 years.

- international controls on all nuclear materials

03.020

Sincerely,  
Genny Scheldorf  
9112 Hudson Lane  
Louisville, KY 40291

And Cindy Scheldorf

10.024: The spent fuel that would be created as a consequence of commercial use of LEU fuel (derived from surplus HEU) in reactors would replace spent fuel that would be created in any case from natural uranium-derived fuel. Hence, no incremental spent fuel would result from this program. Although spent fuel contains Pu, because of the high level of radioactivity of spent fuel, it is extremely difficult and costly to separate the Pu. Thus, in accordance with recommendations of the National Academy of Sciences, it is the policy of the United States to make weapons-usable fissile materials at least as proliferation resistant as spent fuel from commercial nuclear reactors.


09.018: The Department of Energy does not consider the option of blending surplus HEU for extended storage reasonable because it would delay beneficial re-use of the material; delay recovery of the economic value of the material; add storage costs; reduce net revenues in the near term; not meet all aspects of the purpose and need of the proposed action; and be practically applicable without additional construction to only a small portion (20 t or approximately 40 t if a solidification facility is proposed and constructed at or near SRS) of the current surplus inventory.

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03.020: The United States has begun to subject its stockpiles of surplus weapons-usable fissile materials to IAEA controls. There is some HEU under IAEA safeguards at the Y-12 Plant, as well as some Pu at the Hanford and Rocky Flats sites. It is DOE's intent to make additional quantities of surplus material subject to international controls to the maximum extent possible.

Comment Documents  
and Responses

1025-1



United States Department of Energy

NAME: (Optional)

Randy Shackelford

ADDRESS:

501C Pilgrim Court, Johnson City, TN 37601

TELEPHONE: ( )

(423) 929-9107 (Home)/(423) 743-9141

I want to express my full support for the preferred alternative for the disposition of surplus highly enriched uranium (i.e., Alternative 1: Maximum Commercial Use). I believe this option is the most reasonable alternative from a variety of standpoints (i.e., environmental, economic, nonproliferation, etc.). Although I would like to see this material come to the Nuclear Fuel Services Facility in Erwin, Tennessee, Alternative 5 is the only reasonable option regardless of which facility performs the blending.

I would, however, like more information on exactly how the preferred blending site will be selected (i.e., what will be the basis for selecting the preferred blending facility?).

Please return your comments to the registration desk or mail to:  
U.S. Department of Energy  
P.O. Box 23786, Washington, D.C. 20026-3786  
Or fax comments to: 1 (800) 820-5156

**10.003:** Comment noted.

**08.005:** Under the Preferred Alternative, DOE considers it likely that more than one facility will participate in the HEU blending program. It is anticipated that competitive bidding procedures will play an integral role in the selection of blending facilities, and decisions could be made by USEC or other entities in addition to DOE.

### *Disposition of Surplus Highly Enriched Uranium Final EIS*

124 Chestnut St., #210  
Englewood, OH 45322  
December 31, 1995

David Nulton  
Office of Fissile Materials Disposition  
United States Department of Energy  
1000 Independence Avenue SW  
Washington, DC 20565

Dear David Nulton:

The Department of Energy's *Environmental Impact Statement on the Disposition of Highly Enriched Uranium* has two goals: the first is to achieve nonproliferation of weapons-grade uranium, and the second to realize the peaceful and beneficial use of this radioactive material in a way which will return monies to the federal treasury, i.e., use as commercial nuclear fuel.

The first goal of nonproliferation is questionable since no controls for spent nuclear fuel are indicated (except as these may appear in a separate document). Downblending to nuclear fuel and fuel-rod sales are being turned over to the United States Enrichment Corporation which could, and likely will, market the radioactive fuel internationally. No controls are specified over the reprocessing of the resultant spent fuel or on the return of the spent fuel to the United States.

The second goal of returned monies to United States coffers, as yet unquantified and not likely to be so, offers only a blind eye to proliferation possibilities.

The time required for downblending at the Portsmouth and Paducah sites to four percent at present capacity would take ten years for the initial 200 tons of highly enriched uranium (HEU). It is likely that more HEU will be declared to be surplus during that ten years. No other potential downblending sites are named as a means of maintaining a reasonable time-frame.

Also, the preferred option of commercial use of downblended HEU as fuel would result in thousands of tons of spent nuclear fuel. No analysis of the environmental impacts or costs for storage of this spent fuel have been offered or are forthcoming.

I sincerely believe the following steps would secure the most reasoned results for the disposition of HEU:

1. Downblending the HEU would be the surest way to achieve the nations goal of nonproliferation of nuclear weapons.
2. Downblended HEU sold on the world market as fuel would compromise nonproliferation unless criteria to prevent reprocessing are required. Nonproliferation should have a higher priority than monies coming into the federal coffers.
3. Downblending HEU to four percent and storing indefinitely with full record and inspection procedures in place would allow the best time-frame for removing the HEU from weapons usable radioactive material.
4. The HEU disposition plan must be a long-term plan which includes environmental impacts, health, and safety factors (for workers and the public) for all phases from downblending to safe disposal of spent nuclear fuel.
5. The disposition plan should conform to international standards (IAEA) of control, safeguard,

03.024

07.013

14.005

09.020

03.024  
cont.

09.020  
cont.

30.009

15.006

03.024: The Department of Energy agrees that nonproliferation is the predominant objective of the HEU disposition program. DOE considers it unnecessary to place controls on the commercial spent fuel that would result from the commercial use of LEU fuel derived from surplus HEU, because that LEU fuel derived from surplus HEU would simply replace fuel that would be used anyway. Consequently, there would be no increase in the generation of spent fuel (and no increase in the possibility of reprocessing of spent fuel abroad for commercial [non-weapons] use) as a consequence of the HEU disposition program.

A study comparing the costs of HEU disposition alternatives has been prepared for DOE separately from this EIS to aid in reaching an ROD concerning HEU disposition. This study (which has been disseminated to this commentor and all others who expressed an interest in this subject) confirms DOE's preliminary conclusion that sale and commercial use of LEU fuel derived from surplus HEU would save billions of dollars compared to the alternative of blending HEU for disposal as waste, and in the best case, would actually yield net revenues of several hundred million dollars to the Federal Treasury. Because blending for commercial use and blending for disposal as waste are deemed equivalent in terms of serving the nonproliferation objective, there is no conflict between that objective and the economic recovery objective of the HEU disposition program.

07.013: Except for 13 t of highly enriched UF<sub>6</sub> that was transferred to USEC in 1994 as part of the transaction that created USEC, which is currently being blended at the Portsmouth Gaseous Diffusion Plant, the HEU Final EIS does not contemplate any HEU blending at the two enrichment plants. Those facilities could blend HEU only in the form of UF<sub>6</sub>, and there is no additional surplus HEU in that form. The EIS analyzes HEU blending at four other facilities, two DOE and two commercial. DOE estimates that in light of its ability to make material available for blending and other constraints on its ability to process material, blending up to 200 t of HEU is likely to take 20 to 25 years to complete. DOE considers that a reasonable timeframe for these activities.

14.005: The HEU EIS does not need to explicitly analyze the disposal of spent fuel, since this program would create no incremental spent fuel to dispose of. As explained in Section 1.4.2 of the HEU EIS, spent fuel management and disposal is covered by the *Nuclear Waste Policy Act*, as amended. That program has its own NEPA process which must be fulfilled.

Comment Documents  
and Responses

SHEARER, VELMA M., ENGLEWOOD, OH  
PAGE 2 OF 2

and transparency.

6. Since the downblending capacities of Portsmouth and Paducah are limited, further capacity should be considered in order to accomplish the task within the specified time and to demonstrate to other nations that the United States is serious about nonproliferation.

7. An option for the future (the second decade of downblending) would be to downblend to one percent the stored uranium of four percent enrichment, and then to plan for its disposal.

I sincerely appreciate the opportunity to comment on this document and look forward to your response.

Sincerely,

*Velma M. Shearer*

Rev. Dr. Velma M. Shearer

15.006  
cont.

07.013  
cont.

09.006

**09.020:** Down-blending the HEU is the objective of all of DOE's action alternatives. DOE does not consider the option of blending HEU for extended storage reasonable because it would delay recovery of the economic value of the material and incur unnecessary costs and environmental impacts due to the need to build additional storage capacity to accommodate the increased volume of the material.

**30.009:** The disposal of spent fuel does not need to be considered in the HEU EIS because, as discussed in Section 1.4.2 of the HEU Final EIS, the surplus HEU disposition program would create no spent fuel that would not exist in its absence.

**15.006:** It is DOE's intent to subject the surplus HEU disposition program to IAEA safeguards to the maximum feasible extent.

**09.006:** The Department of Energy does not consider it reasonable to blend surplus HEU to 4-percent LEU and then store it for an extended period of time. Such a course would maximize Government expenditures for disposition, because it would necessitate the construction of new storage facilities for the much higher volume of material and would involve no offsetting revenues from sales of commercial material. HEU that is destined to be blended to 0.9-percent LEU for disposal as waste would likely be blended directly to that enrichment level, rather than stopping at an intermediate 4-percent level for some years of storage.

Sierra Club-State of Franklin Group

Linda Cataldo Modica, Group Chair  
266 Mayberry Road  
Jonesborough, TN 37659  
Phone: (423) 753-9697  
Fax: (423) 753-5429  
E-mail: linda.modica@sierrclub.org  
January 22, 1996

DOE--Office of Fissile Materials Disposition  
c/o SAIC-HEU EIS  
P.O. Box 23786  
Washington, DC 20026-3786 VIA FAX: (800) 820-5156

RE: COMMENTS ON THE DISPOSITION OF SURPLUS HIGHLY ENRICHED  
URANIUM, DRAFT ENVIRONMENTAL IMPACT STATEMENT, OCT. 1995

Dear Sir or Madam:

The State of Franklin Group of the Sierra Club appreciates the opportunity to comment on the Draft Environmental Impact Statement on the Disposition of Surplus Highly Enriched Uranium. Our Group has 300 members in the Tri-Cities area which encompasses the town of Erwin, TN -- the location of the Nuclear Fuel Services company, one of the firms that may perform downblending operations under DOE's "preferred alternative."

Comments

1) The Department of Energy, by holding only a workshop 100 miles away, has failed to offer the community of Erwin the opportunity to become better informed of the Highly Enriched Uranium (HEU) disposition problem, and to voice its concerns over Nuclear Fuel Services' involvement in the HEU disposition program. Therefore, a hearing in Erwin (or in another nearby town, like Johnson City) should be scheduled immediately.

32.014

2) At the soonest possible date, the DOE should embark upon an epidemiological study of the health of the people of Erwin, and of Jonesborough and Greeneville, the largest communities downstream of Nuclear Fuel Services. Previous studies have focused only on NFS's workers and have failed to exhaustively assess the health affect of NFS's radioactive discharges into the air and water.

06.022

32.014: The Department of Energy welcomes your comments on the HEU Draft EIS. However, DOE must work within the constraints imposed by available funding and resources. Because DOE is trying to reduce costs of complying with the NEPA, and due to the geographical proximity of three of the four candidate sites identified in the HEU EIS, DOE determined that two public meetings (Knoxville, TN and Augusta, GA) would be appropriate for this program.

Because public involvement is critical to the success of the program, other methods were also made available throughout the comment period: toll-free fax and voice recording, electronic bulletin board, and U.S. mail. These methods can also be used to request additional information or to be placed on the Office of Fissile Materials Disposition's mailing list.

06.022: The *National Environmental Policy Act* does not mandate epidemiological studies such as are requested. The analysis in the HEU EIS includes impacts on surrounding populations as well as site workers, and indicates that, in the absence of highly unlikely accidents, the health and safety impacts of surplus HEU disposition actions at NFS would be low. The safety of the NFS facility is regulated by NRC. The HEU Final EIS also includes available epidemiological data (Appendix E.4).

3) As the draft EIS notes (p. 3-102), Nuclear Fuel Services is built on the floodplain of the Nolichucky River. But what the DOE's report fails to adequately consider are the disastrous affects on water quality downstream of NFS in the event of a major flood which would inundate much of the plant, according to recent geologic analyses. [See R. David Bagaley III, "Paleohydraulic Reconstruction of Flood Peaks from Boulder Deposits Along Three Reaches of the Nolichucky River in Northeastern Tennessee," May 1993. See also Tennessee Valley Authority, "Floods on Nolichucky River and North & South Indian Creeks in Vicinity of Erwin Tennessee."]	22.014
4) The draft EIS fails to accurately report that Nuclear Fuel Services has had an accident history fraught with mishaps and Material Unaccounted For (MUF) incidents. While NFS may not have committed any OSHA or TOSHA infractions during the past 7 years (p.3-117), Nuclear Fuel Service employees caused a substantial explosion and fire in 1992 by failing to adhere to appropriate materials handling practices. A burst valve in August 1979 caused a significant airborne release of uranium hexafluoride gas, and press accounts report that NFS dumped 250 pounds of uranium into the Nolichucky River in 1977. Furthermore, throughout the 1970s, NFS so miserably failed in its recordkeeping and/or safeguarding responsibilities, that substantial amounts of highly enriched uranium are still considered Material Unaccounted For (MUF). The State of Franklin Group does not believe that the Tri-Cities public considers Nuclear Fuel Services' record "exemplary" (p.3-117).	21.020
5) Nuclear Fuel Services should be restrained from any new commercial activity until its site is completely remediated. Decommissioning at NFS is currently underway, and the contamination caused by previous accidents, as well as normal operations, is being removed. Sediments in Banner Spring Branch, Martin Creek & the Nolichucky River -- as well as the groundwater below the plant -- need to be exhaustively tested to ensure that all radioactive contamination (which poses a threat to human health, aquatic organisms & the popular sport of fishing) is abated. Employment of laid-off workers might be increased to speed up the decontamination process.	25.002
6) To ensure that the community of Erwin is apprised of NFS' progress toward decontamination of its site and of public waterways, a Citizens Advisory Board needs to be formed. The Citizens Advisory Board should be given the authority to question NFS, NRC and DOE management on the adequacy of the decontamination measures undertaken. Should the DOE select Nuclear Fuel Services as a contractor which would perform downblending operations, the Citizens Advisory Board should continue to monitor NFS and report to the community on public health issues.	32.013

22.014: After review of a study *Paleohydraulic Reconstruction of Flood Peaks from Boulder Deposits Along Three Reaches of the Nolichucky River in Northeastern Tennessee* (Bagaley, May 1993) and Tennessee Valley Authority's *Floods on Nolichucky River and North and South Indian Creeks in Vicinity of Erwin Tennessee* (Report No. 0-6589, March 1967), as well as other studies and maps (that is, Federal Emergency Management Agency's [FEMA] Flood Insurance Study from 1984 and the 1985 FEMA Flood Insurance Rate Map), it was concluded that the site is located in the probable maximum flood area as well as 100- and 500-year floodplains of the Nolichucky River, as the HEU EIS states. Numerous warning devices and systems are in place along the river to warn the public and the plant of the chance of flooding. The NFS site has emergency plans that are in place to contact the City of Jonesborough Water Treatment Plant as well as other national, State, and local committees to inform them when any accidental releases from the plant occurs. During flooding or because of accidental releases to the surface water, the Jonesborough Water Treatment Plant closes off the water intake valves to avoid contamination to the public water supply. In addition, the intake valves are monitored routinely for any water contamination problems.

21.020: The Nuclear Fuel Services Fuel Fabrication Plant has never experienced a fatality resulting from work-related activities nor has a criticality accident ever occurred at NFS. A release of UF<sub>6</sub> occurred on August 7, 1979. The incident was investigated by NRC and was concluded that the quantities released were within regulatory levels. Mitigation measures were implemented after this event. The vaporization station and the scrubbing system were redesigned. A secondary scrubber was added exterior to the process. Detection systems were installed with an alarm at the work station for the process ductwork prior to the entire scrubber and in the stack after the scrubbing systems. In addition, monitoring systems were enhanced and operational procedures were revised.

On September 17, 1979, NFS was closed by NRC because of a uranium inventory difference. On that date, NFS reported to the NRC that the inventory difference for the bimonthly physical inventory taken on August 14, 1979, was in excess of the upper limit specified in the license condition. The plant was closed that same day, and an NRC inspection team examined the plant's inventory listing and item control system records. After a full investigation by NRC, it was determined that the incident was the result of bookkeeping flaws and no material was found to be missing. The unaccounted uranium was located in the process holdup (ventilating hoods, flues, filters, ductwork, piping). The uranium accounting system was modified, and a stringent campaign was conducted to measure the uranium in the ventilation systems. To date, NFS has met all measurement limits of errors.

7) Nuclear Fuel Services should never again be allowed to regulate itself. Should the DOE embark upon its "preferred alternative" and select NFS as a contractor, the Erwin facility should be vigorously & constantly monitored by a full-time NRC inspector.	25.004
8) The State of Franklin Group is sympathetic to the plight of the 400 NFS employees who have been terminated and who are now working at considerably lower wages, or are still unemployed. Should NFS fail to obtain a downblending contract from the DOE, another 300 jobs may be lost. Like the rest of the community, the State of Franklin Group wants workers to be gainfully employed in facilities that do not pose threats to worker or public safety. Therefore, high-tech, high-wage environmentally-friendly alternative employment should be sought for the employees of NFS by the Nuclear Regulatory Commission, the Department of Energy, the State of Tennessee, the Oil, Chemical & Atomic Workers Union, and other agencies. Also, Nuclear Fuels Services' management should further develop the expertise of its workforce in consulting and R&D. Clean services like these would be welcomed in the community of Erwin once NFS decontaminates its facilities.	24.008
9) Old age will cause the retirement of a substantial portion of the nation's nuclear generating capacity over the next few years. Further, fusion power should begin to substitute for fission early in the 21st Century. The demand for power plant fuel will therefore decline, which leads the State of Franklin Group to question the need for the DOE's commercial-fuel-from-weapons downblending program. Sequestration of the surplus highly enriched uranium at the Y-12 plant might be a safer option from the standpoint of human health and nonproliferation. [See comments by Pete Zars, private citizen of Erwin, dated 1/23/96.]	09.023
Thank you again for the opportunity to comment on DOE's draft EIS. Please keep the State of Franklin Group informed throughout the decision making process. Our Sierra Club Group offers its services to the Tri-Cities and the DOE, and will welcome the opportunity to serve on the Citizens Advisory Board. The State of Franklin Group could also assist the DOE in the development of a mailing list of individuals who should be invited to speak at the public hearing in Erwin, and in the formation of a list of members of the local medical community who should be consulted for the epidemiological study.  Sincerely,  <i>Linda C. Modica</i> Linda C. Modica Group Chair	32.015

A flash fire did occur inside the 200 Complex at a dissolver in 1992. Material processed in the dissolver burst into flames and caused localized damage inside the facility. The ventilation and emergency response systems prevented radioactive releases outside the facility. There were no injuries nor overexposures to employees. The NRC conducted an independent investigation (NRC Report CAL070-0143/92-01). Administrative procedures were revised to prevent recurrence.

No single incident occurred releasing 250 pounds of uranium into the Nolichucky River in 1977. In 1977, a treatment system was implemented at NFS to reduce the uranium content in waste waters being discharged to the Nolichucky River. Prior to that, the waste water was not treated, and uranium was being discharged in minimal concentrations.

**25.002:** The Nuclear Fuel Services Fuel Fabrication Plant has prepared a work plan for Phase 1 decommissioning and decontamination of the NFS site. The work plan has been approved by the State of Tennessee, EPA, and NRC. Work is underway in accordance with the approved work plan. NFS is also preparing a comprehensive plan for subsequent phases of the decommissioning and decontamination of the site. When completed, this plan will be submitted to the appropriate regulatory agencies for approval.

**32.013:** The NFS site is a privately operated commercial entity whose operations are regulated by NRC, EPA, and State regulatory agencies. DOE has no regulatory jurisdiction over NFS operations nor does DOE have authority to establish a Citizen Advisory Board for the community of Erwin. Furthermore, selection of a contractor (or a site) or contractors to perform down-blending operations will be based largely on business considerations including availability of the site when needed and competitive bidding.

**25.004:** The Nuclear Fuel Services Fuel Fabrication Plant has never been allowed to regulate itself; it has always been licensed and regulated by NRC or its predecessor, the Atomic Energy Commission. NRC places resident inspectors at all power reactors but only rarely at materials licensees such as NFS.

**24.008:** Decisions about where specific batches of HEU are expected to be blended are based largely on business considerations, although employment impacts are also relevant. Alternative economic development for the Erwin area is outside the scope of this EIS.

**09.023:** The Department of Energy agrees that storage of HEU at the Y-12 Plant for a moderate time (10 to 15 years) presents no serious safety or safeguard risks. However, in the longer term, such storage is unacceptable from a nonproliferation standpoint because it leaves the material in weapons-usable form, thus failing to set an example for other nations.

**32.015:** The Department of Energy supports the public's involvement and is fully committed to giving the public access to information about its activities and opportunities for involvement in DOE's decisionmaking process. To facilitate this, the Office of Fissile Materials Disposition has compiled and continuously maintains a mailing list of individuals and organizations interested in the storage and disposition of weapons-usable fissile materials. These parties receive newsletters, fact sheets, and other information addressing program activities. Anyone who would like to be added to this mailing list should forward their request to:

U.S. Department of Energy  
Office of Fissile Materials Disposition, MD-4  
1000 Independence Ave., S.W.  
Washington, DC 20585



Southern Nuclear Operating Company  
Post Office Box 1205  
Birmingham, Alabama 35201  
Telephone (205) 868-5550  
Fax (205) 870-6165

James H. Miller III  
Executive Vice President and Corporate Counsel

  
Southern Nuclear Operating Company  
a subsidiary of The Southern Company

January 16, 1996

U.S. Department of Energy  
Office of Fissile Materials Disposition  
P.O. Box 23786  
Washington, D.C. 20226-3786

COMMENTS ON  
THE DISPOSITION OF SURPLUS HIGHLY ENRICHED URANIUM  
DRAFT ENVIRONMENTAL IMPACT STATEMENT  
(60 Federal Register 55921 Dated October 27, 1995)

Dear Sir:

In response to the Department of Energy's October 27, 1995 notice in the Federal Register, Southern Nuclear Operating Company, Inc. has reviewed The Disposition of Surplus Highly Enriched Uranium (HEU) Draft Environmental Impact Statement (EIS) and is providing the following comments:

- 1) We strongly support the Department of Energy's (DOE) proposal to blend down to the maximum extent possible surplus HEU to Low-Enriched Uranium (LEU) for use as commercial nuclear fuel (Alternative 5 of the Draft Environmental Impact Statement). This alternative provides the best options for eliminating the risk of diversion for nuclear proliferation purposes while minimizing any impact on the environment.
- 2) We concur with DOE's analysis that Alternative 5 will have the least impact on the environment from an ultimate waste disposal standpoint.
- 3) We believe DOE has over estimated the reduction in deliveries that domestic producers would experience during the blending period and that the Department should review its analysis in this area. Based on studies available to us, which include LEU supplies from both Russian and U.S. HEU blending, world uranium inventories would be projected to continue to decrease and U.S. production to continue to increase.
- 4) We disagree with DOE's assessment that an oversupply condition exists in the conversion industry. With the shutdown of the Sequoyah Fuels Corporation facility, the CAHECO Corporation and Allied-Signal, Inc. facilities are the only remaining conversion suppliers in North America. These suppliers have indicated their near term production has been soldout and are looking into ways to expand their existing production capabilities.

12.011

12.011: The HEU Final EIS has been revised to more accurately describe the current status of the domestic conversion industry. DOE agrees with the commentor that the HEU EIS no longer accurately portrays the current condition of the domestic markets for nuclear fuel products. Both the uranium and conversion products market are predicted to remain strong in the short and medium term. Prices have increased dramatically in the first quarter of 1996. Long-term prospects, however, are more uncertain. Producers and buyers of conversion products have provided DOE with contradictory projections on future supply and demand. DOE believes, however, that there would not be long-term adverse impacts on the conversion industry, and any adverse impacts that did occur would be largely attributable to the larger quantity of Russian material—not domestic HEU.

SOUTHERN NUCLEAR OPERATING COMPANY, BIRMINGHAM, AL  
PAGE 2 OF 2

January 16, 1996  
Page 2.

Further, U.S. and European import restrictions and controls upon Russian material restrict the utilization of Russian conversion capacity. We recommend DOE review its impact analysis on the conversion industry.

12.011  
cont.

Should you have any question, please advise.

Respectfully submitted,

*J. H. Miller, III*  
J. H. Miller, III

JHM/BEH


Yes. My name is Dennis Sparks. I reside in Erwin, Tennessee. I spent twelve years working at Nuclear Fuels Services, and I just wanted to let the DOE know that I feel like we could do a very good job of processing this order, and that our community and our small town which is dependant on nuclear fuel and the jobs that it's brought forth over the years has been greatly impacted by the reduction in jobs that we've had. I speak especially for myself. I have a disability, and I cannot find any work because of the specialized experience I had at Nuclear Fuel, and I feel like we played a great role in the defense of our country, and we've done a real good job and took pride in our work. So I would ask that the DOE would certainly give us the utmost consideration in getting this order here because we have so many people that are really in bad need and of course I know that the case in a lot of places, but as for myself it has created such a hardship on us. We have lost about everything we've got, and we would certainly like to go back to work and keep our plant going, because I feel like it might be needed in the future, that the country right now instead of being safer than it was could actually be more at risk for some type of nuclear war or some type of disturbance just due to the fact that you have so much uranium out there, that you don't know who's hands it's in. I feel like we have a lot of good trained people and it would be a disadvantage for our country to lose those people. If we don't get something going before long, I mean people are just going to go on, and it's not going to be so easy to re-train these people on jobs that are sophisticated and technical as we did. If there is anything else that I could do to help our cause, at NFS and Erwin, I would appreciate a letter or anything. My address is Route 1, Box 300D (D as in dog), Unicoi, Tennessee, and the zip is 37892. I appreciate your time, and giving me the opportunity to express my comments, and would hope that the DOE would give us the utmost consideration, because we have one of the highest unemployment rates in the State of Tennessee, and we need the jobs desperately bad, and we need the work. Thank you for your time. Bye-bye.

10.003

10.003: Comment noted.

STATE OF MISSOURI OFFICE OF ADMINISTRATION,  
JEFFERSON CITY, MO  
PAGE 1 OF 1

Mal Carnahan  
Governor



State of Missouri  
OFFICE OF ADMINISTRATION  
Post Office Box 809  
Jefferson City  
65102

Stan Pavovich  
Director  
Division of General Services

Richard A. Hanson  
Commissioner

November 13, 1995

Greg Rudy  
Acting Director  
Office of Fissile Materials Disposition  
Department of Energy  
P. O. Box 23786  
Washington, D.C. 20026-3786

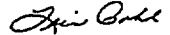
Dear Mr. Rudy:

Subject: 9510003b - Draft Disposition of Surplus Highly Enriched Uranium EIS

The Missouri Federal Assistance Clearinghouse, in cooperation with state and local agencies interested or possibly affected, has completed the review on the above project application.

None of the agencies involved in the review had comments or recommendations to offer at this time. This concludes the Clearinghouse's review.

A copy of this letter is to be attached to the application as evidence of compliance with the State Clearinghouse requirements.

Sincerely,  
  
Lois Pohl, Coordinator  
Missouri Clearinghouse

LP:cm

23.001: Comment noted.

23.001

Disposition of Surplus Highly Enriched Uranium Final EIS

STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL  
PROTECTION, TRENTON, NJ  
PAGE 1 OF 1

**23.001:** Comment noted.



Christine Todd Whitman  
Governor

State of New Jersey  
Department of Environmental Protection

**Robert C. Shinn, Jr.**  
**Commissioner**

December 8, 1895

U.S. Department of Energy  
Office of Fissile Materials Disposition  
c/o SAIC-HEU  
P.O. Box 23786  
Washington, DC 20028-3786

RE: Disposition of Surplus Highly Enriched Uranium  
Draft Environmental Impact Statement (October 1995)

**To Whom It May Concern:**

The New Jersey Department of Environmental Protection has completed its review of the above referenced document. The Department has no comments on the Draft Environmental Impact Statement, nor any objections to the proposed action.

Thank you for providing the Department the opportunity to review this document.

Sincerely,  
Lawrence Schmidt  
Director  
Office of Program

Laurence Schmidt  
Director  
Office of Program Coordination

c. Jill Liputi, Radiation Protection

New Jersey is an Equal Opportunity Employer  
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**23.001**

## ***Comment Documents and Responses***

STATE OF TENNESSEE, DEPARTMENT OF ENVIRONMENT AND  
CONSERVATION, OAK RIDGE, TN  
PAGE 1 OF 8

Disposition of Surplus Highly  
Enriched Uranium Final EIS

STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
NASHVILLE, TENNESSEE 37243-0435



DOE/SUNDQVIST  
Governor

DOE/DILLS  
Commissioner

January 11, 1996

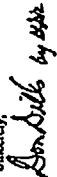
US Department of Energy  
Office of Fissile Materials Disposition  
c/o SAIC/HEU EIS  
P.O. Box 23786  
Washington, DC 20026-1786  
Attention: J David Nulton, Director  
Office of NEPA Compliance and Outreach

Dear Mr. Nulton:

On behalf of the State of Tennessee, and as the state's Lead Contact for National Environmental Policy Act (NEPA) reviews, I have enclosed the responses of two individual state agencies to the *Disposition of Surplus Highly Enriched Uranium Draft Environmental Impact Statement (DEIS) DOE/EIS-0240-DS, October 1995*. These reviews have been conducted in accordance with the requirements of NEPA and implementing regulations of 40 CFR 1500-1.508 and 10 CFR 1021.

Please consider the comments of each agency as the position of the State of Tennessee. Please refer to the enclosed correspondence from Tennessee Governor Don Sundquist to Secretary Harold O'Leary (dated December 15, 1995). A copy of this letter is provided due to the relationship of low level and low level mixed waste management and associated storage issues described in the current Disposition of HEU EIS to the previous Waste Management PEIS.

Your consideration of the interests of the State of Tennessee is greatly appreciated.

Sincerely,  
  
Don Dills  
Enclosures  
cc: State DOE-NEPA Contacts and Administrators (with enclosures)  
LFR:zsd:bac  
01/11/96



STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
DOE OVERSIGHT DIVISION  
781 EMORY VALLEY ROAD  
OAK RIDGE, TENNESSEE 37830-7072

RECEIVED BY

DEC 28 1995

ENVIRONMENTAL POLICY OFF.

December 21, 1995

Mr. Don Dills, Commissioner  
Tennessee Department of Environment and Conservation  
c/o Tennessee Environmental Policy Office  
14th Floor L&C Tower  
401 Church Street  
Nashville, Tennessee 37243 - 1553

Dear Commissioner Dills

Document NEPA Review -- "Disposition of Surplus Highly Enriched Uranium Draft  
Environmental Impact Statement," DOE/EIS-0248-DS, dated October 1995.

The Tennessee Department of Environment and Conservation, DOE Oversight Division has  
reviewed the above document for your concurrence and transmittal to the following DOE office:

US Department of Energy  
Office of Fissile Materials Disposition  
c/o SAIC/HEU EIS,  
PO Box 23786  
Washington, DC 20026 - 3786

Our office review was conducted in accordance with the requirements of the National  
Environmental Policy Act (NEPA) and implementing regulations 40 CFR 1500 - 1508 and 10  
CFR 1021.

This document has four sites being considered for blending operations: DOE Y-12 Site in Oak  
Ridge, Tennessee on the Oak Ridge Reservation (ORR), Nuclear Fuels Services (NFS) in Erwin,  
Tennessee, Babcock and Wilcox (B&W) facility in Lynchburg, Virginia, and the DOE Savannah  
River Site (SRS) in Aiken, South Carolina. The scope of this document deals with only 200 tons  
of surplus highly enriched uranium, with the major portion of the material now stored on the  
ORR.

Comment Documents  
and Responses

STATE OF TENNESSEE, DEPARTMENT OF ENVIRONMENT AND  
CONSERVATION, OAK RIDGE, TN  
PAGE 3 OF 8

Commissioner Don Dills  
Page Two  
December 21, 1995

After review and research, the Division concurs with the DOE preferred Alternative (5.c. Maximum Commercial Use 85% Fuel/15% Waste Ratio all four site variation). However, we do have concerns dealing with the disposition of the Low Level Waste in regard that such waste would be consistent with the DOE's Waste Management PEIS and associated ROD's. The Division reiterates its position stated in our review of the WM PEIS, in opposition to siting large scale disposal facilities on the Oak Ridge Reservation for Low Level Mixed and Low Level Wastes.

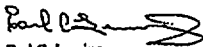
10.003

28.003

In addition, we have the attached comments for your review and consideration in the preparation of a final programmatic environmental impact statement.

If you have any questions, please contact Dale Rector at (423) 481-0995 or Steve Nisley at (423) 481-0163.

Sincerely

  
Earl C. Leming  
Director

Attachment

cm0297.99

10.003: Comment noted.

28.003: The decision where product LLW from the surplus HEU disposition program (0.9-percent LEU derived from surplus HEU) would be disposed of is not part of the HEU Draft EIS, but rather is being made in conjunction with DOE's Waste Management PEIS (DOE/EIS-0200-D, draft issued in August 1995) and subsequent tiered or site-specific NEPA documentation. DOE assumes that process LLW generated as part of the surplus HEU disposition program at the commercial facilities (incidental waste generated during the blending process) would be disposed of as part of the normal process waste stream from those facilities, presumably in a regional compact LLW repository. Product LLW would be considered DOE waste, and thus not eligible for disposal in regional compact facilities, whether it is blended at DOE sites or commercial sites. It is assumed that all product LLW must be disposed of in DOE LLW facilities pursuant to the Waste Management PEIS.

Disposition of Surplus Highly  
Enriched Uranium Final EIS



Tennessee Department of Environment and Conservation DOE Oversight Division	
Comments on Draft Environmental Impact Statement for Disposition of Surplus Highly Enriched Uranium, DOE/EIS-0240 DS, October 1995	
General Comments:	
In the public meeting in Knoxville on November 14, 1995, DOE stated that additional HEU material would be declassified in December, 1995. The details of that declassification should be provided in the EIS.	02.007
The risk factors tables show a difference of two orders of magnitude between the sites. The assumptions made for these calculations are not completely disclosed, and may be too generic in nature to make comparisons possible. Therefore, the decision should not be based on risk factors alone.	21.019
A cost evaluation of each alternative, including estimated initial costs for the proposed project, should be included in the final EIS.	16.015
Natural Uranium Hexafluoride (UF <sub>6</sub> ) is valuable as feedstock in the gaseous diffusion process; therefore, it doesn't make sense to use it for blending purposes since there is an excessive amount of depleted UF <sub>6</sub> available at Paducah, Portsmouth and at Oak Ridge K-25 site. Natural UF <sub>6</sub> is mentioned in several places in section 4.4 "Interstate Transportation" (and possibly in other sections) for blending purposes. Natural UF <sub>6</sub> should be changed to depleted UF <sub>6</sub> when listed for use as a blendstock in the EIS.	
In addition to the above comment, depleted UF <sub>6</sub> that is stored at the K-25 site should be evaluated in the EIS for use as blendstock.	33.009
Specific Comments:	
1. Page S-18, Summary, Basis for Analysis, Paragraph 4	
Depleted UF <sub>6</sub> , useful as blend stock, may also be obtained from the Oak Ridge K-25 site. The K-25 site should be added to this paragraph in the EIS	
2. Page I-6, Section I.4.2, Preferred Alternatives	
In addition, any LLW transferred to any LLW facility would be consistent with the Department's WM FEIS and associated ROD, any subsequent NEPA documents itered from or supplementing the Waste Management FEIS. Please provide information to address the disposition of LLW at	28.003 cont.

02.007: Information about the forms and locations of material that make up the inventory of surplus HEU was declassified by the Secretary of Energy on February 6, 1996, and is included in the HEU Final EIS in Figure 1.3-1.

21.019: Variation of risk factors between candidate sites are expected for any alternative due to site-specific characteristics such as land, area, meteorology, and others. For normal operations and facility accidents, the source terms (the quantity of radioactive material that can potentially be released) are the same for each candidate site. When this material is released to the environment, it is transported through the atmosphere to the receptor (worker or public). Site-specific meteorology and distance from the release point will determine the subsequent concentration of these materials in the atmosphere. The closer a receptor is to the release point, the greater the concentration. The more stable the air mass or slower the wind speed, the greater the concentration. The greater the concentration of these materials, the greater the dose received by the receptor and the greater the risk calculated. Appendix E of the HEU Final EIS presents the methodology and assumptions used in both normal operations and accident conditions in performing public and occupational health assessments. Decisions on the proposed action and site selection would likely include several other environmental and economic factors in addition to health risks.

16.015: Cost estimates for the alternatives analyzed in the HEU EIS have been developed to provide the decisionmaker, DOE, comprehensive information upon which to make decisions. The cost analysis, which has been provided to this commentor and all others who have expressed an interest in this subject, is available in a separate document with the HEU Final EIS. It supports the conclusion that commercial use of LEU fuel derived from surplus HEU would save billions of dollars compared to the alternative of blending HEU for disposal as waste.

33.009: During the enrichment process, as the ratio of U-235 increases the ratio of U-234 to U-235 increases, accordingly. Using depleted uranium in the blending process will reduce the ratio of U-235 to U-238 but will not change the ratio of U-234 to U-235. To meet the American Society of Testing Materials specification for commercial fuel feed, it is necessary to reduce the U-234 to U-235 ratio. To reduce the ratio of U-234 to U-235, it is necessary to add U-235 in the natural uranium or LEU enrichment state. Depleted uranium would be used as the blendstock for blending to waste because the ratio of U-234 to U-235 is not included in the waste acceptance criteria for waste disposal.

Comment Documents  
and Responses

STATE OF TENNESSEE, DEPARTMENT OF ENVIRONMENT AND CONSERVATION, OAK RIDGE, TN  
PAGE 5 OF 8

the two proposed commercial sites as the WM PEIS does not address commercial waste disposition.	28.003 cont.
3. Page 3-17 & 3-18, Section 3.3.4 & 3.3.5 Water Resources & Geology and Soils  Please provide information in the groundwater section of this document on karst hydrology in the carbonate units on the ORR. No information is given on groundwater velocity and solution enlarged conduits in these units. In addition, please provide information on groundwater preferential pathways, e.g., along strike migration.	22.017
4. Page 3-18, Section 3.3.5 Geology and Soils  <i>Recharge occurs over most of the area, but is most effective where overburdened soils are thin or permeable. In the area near Bear Creek Valley, recharge into the carbonated rocks is mainly along recharge into the carbonated rocks is mainly along Chestnut Ridge. Groundwater generally flows from the recharge areas to the center of Bear Creek Valley and discharges into Bear Creek and its tributaries. Please provide evidence to substantiate this statement.</i>	22.018
5. Page 3-18, Section 3.3.5, Geology and Soils  Provide information to show if the groundwater meets drinking water criteria for a water supply.	22.015
6. Page 3-40, Section 3.3.10 Low-Level Waste  The information provided on Class L-1 and Class L-11 LLW facilities is currently inaccurate please omit or provide current information.	22.013
7. Page 4 - 105, Section 4. 4. 2. 1 Site Transportation Interfaces for Hazardous Materials  Please provide information on why hazardous materials transportation by rail was not addressed. Also, compare public exposures and accidents for rail transportation vs. truck transportation.	20.012
8. Page 4 - 162, Section 4. 6. 2, Site-Specific Cumulative Impacts  Please provide cumulative impact assessment for the ORR incorporating the data from the Waste Management PEIS document that was omitted.	25.007

Depleted UF<sub>6</sub> would not be used for blending to waste because only commercial sites would use UF<sub>6</sub> as a blendstock for blending with the UF<sub>6</sub> process. Since depleted uranium cannot be used as blendstock for blending to fuel as described previously, depleted UF<sub>6</sub> would not be used for any of the processes for commercial fuel. Depleted UF<sub>6</sub> would also not be used as a blendstock for UNH or metal blending because it is in an incompatible form and would need to be converted to UNH crystals or metal ingots, and DOE has ample supplies of depleted uranium in metal and oxide form to use as blendstock for waste material.

22.017: Sections 3.3.4 and 3.3.5 of the HEU Final EIS have been revised to include additional information as requested.

22.018: This information presented on page 3-18 of the HEU Draft EIS was obtained from the *Oak Ridge Reservation Environmental Report for 1991*, (ES/ESH-22/V1, October 1992), pages 5-4 to 5-8.

The thickness of the vadose zone is the greatest beneath ridges, and thins towards valley floors. Beneath ridges underlain by the Knox aquifer, the vadose zone commonly is greater than 30 m (100 ft) thick, whereas beneath ridges underlain by the Rome formation, the vadose zone is typically less than 15 m (50 ft) thick. Most recharge through the vadose zone is episodic and occurs along discrete permeable features (such as relict bed-rock fractures) that may become saturated during rain events, even though surrounding microspores remain unsaturated and contain trapped air.

The HEU Final EIS has been revised to include the appropriate citation (OR DOE 1992c: 5-5-5-7).

22.015: A discussion of groundwater quality was provided in Section 3.3.5. However, due to misplaced text the discussion of groundwater quality appeared to be incomplete. This discrepancy has been corrected in the HEU Final EIS. Groundwater quality information at three monitoring wells closest to the Y-12 Plant are shown in Table 3.3.4-2. The information in this table indicates that the quality of groundwater generally meets drinking water criteria.



STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
DIVISION OF RADIOLOGICAL HEALTH  
3RD FLOOR, L & C ANNEX  
401 CHURCH STREET  
NASHVILLE, TN 37243-1532  
615-437-4304  
INTERNET: MHOBLEY@POP.STATE.TN.US

January 10, 1996

DOE - Office of Fissile Materials Disposition  
c/o SAIC - HEU EIS  
P O Box 23788  
Washington, DC 20026-3788

ATTN: J. David Nulton, Director  
Office of NEPA Compliance & Outreach

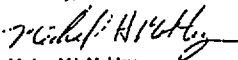
Dear Mr. Nulton:

We have reviewed the DOE/EIS-0240-DS "Disposition of Surplus Highly Enriched Uranium Draft Environmental Impact Statement" and would offer the following comment:

Regardless of which facility is chosen by the DOE to perform the downblending of the HEU, the process should be regulated and licensed by the Nuclear Regulatory Commission. This process should be held to the same regulatory standards as other commercial fuel cycle facilities in the United States.

The independent regulatory oversight of the operations will provide assurance that the public, the workers, and the environment will be adequately protected from any potential radiation hazard.

Sincerely,

  
Michael H. Mobley  
Director

MHM:sk  
010240mhm0201

25.008

22.013: The cited information is current as reported in the most recent reference, *Oak Ridge Reservation Waste Management Plan*, ES/WM-30, February 1995 (OR MMES 1995c), but does not reflect proposed waste management strategies. Section 3.3.10 of the HEU Final EIS has been revised accordingly to include these strategies at ORR.


20.012: Highly enriched uranium is transported exclusively by safe secure trailers. Blendstock, LEU fuel feed material, and LLW could be shipped by any acceptable commercial conveyance selected by the shipping traffic manager. For the HEU EIS, calculations were based on truck transport because that is the mode currently used by the Y-12 Plant, B&W, and NFS. Although rail is not excluded, it is not available at all sites.

25.007: The HEU EIS cumulative impact assessments are revised to include data, to the extent available, from the Waste Management PEIS.

25.008: In response to the recommendations of an advisory committee, DOE is reviewing options to bring its facilities under regulation by an external organization. Although the regulating agency would likely be NRC or the Defense Nuclear Facilities Safety Board, no decision has yet been made.

Comment Documents  
and Responses

STATE OF TENNESSEE, DEPARTMENT OF ENVIRONMENT AND CONSERVATION, OAK RIDGE, TN  
PAGE 7 OF 8



STATE OF TENNESSEE

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DEPUTY COMMISSIONER'S OFFICE

DOE SUNDQUIST  
Governor  
WKS 11/20  
KWA 11/22  
D. D. Galt  
ECU

December 14, 1995

Secretary Hazel O'Leary  
United States Department of Energy  
1000 Independence Avenue, S.W.  
Room 7A-257  
Washington, D.C. 20585

RECEIVED BY  
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Dear Secretary O'Leary:

Recently, agencies of the State of Tennessee submitted comments in accordance with the requirements of the National Environmental Policy Act (NEPA) for the *Draft Waste Management Programmatic Environmental Impact Statement (D-PEIS) for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste, DOE/EIS-0200 D, August 1995*. I have elected to communicate with you directly to insure that the State of Tennessee's policy interests concerning this important D-PEIS are clearly communicated.

My administration strongly opposes and will continue to oppose any attempt by DOE to "site" large waste deposition activities in Oak Ridge, Tennessee. It is disappointing to me that the United States Department of Energy (DOE) continues to seriously consider another short sighted option in a tiring string of waste deposition assessments for Oak Ridge. My administration views all of the alternatives in the current "Waste Management" D-PEIS that consider disposal of low level mixed waste and low level waste on the Oak Ridge Reservation as technically unsound.

It is commonly known, and widely supported inside and outside of Tennessee that Oak Ridge is one of several sites in the DOE complex that does not possess the appropriate geologic or hydrologic character for such large scale waste deposition activities as currently proposed in your D-PEIS. The National Governor's Association/DOE Disposal Working Group specifically recommended that the Oak Ridge complex be considered only for disposal of a very restrictive list of radionuclides due to an emphasis on protection of human health and the environment.

Your own agency's data summary for waste management sites in the current D-PEIS indicates that the Oak Ridge Reservation currently produces the highest "population dose" among the 54 DOE sites around the nation. We believe that a large scale low level mixed waste and low level waste disposal facility at Oak Ridge would add additional risk to an already unacceptable situation.

14.020

State Capitol, Nashville, Tennessee 37243-0001  
Telephone No. (615) 741-2001

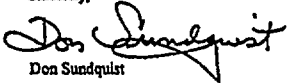
14.020: This comment concerning DOE's draft Waste Management PEIS (DOE/EIS-0200-D, August 1995) is not directly relevant to the issues considered in the HEU EIS. Decisions concerning where DOE's LLW will be treated and disposed are being made pursuant to the former NEPA document, not the latter. The Governor's concerns were addressed in a February 8, 1996, letter from Secretary O'Leary to Governor Sundquist, which noted that ORR is one of 17 "major" candidate sites for potential waste disposal facilities by virtue of its current inventory of waste materials, its waste management facilities, and site capabilities. The selection of preferred alternatives for national waste management configurations will be made in the final Waste Management PEIS, and responses to the Governor's comments will also be included in the associated *Comment Analysis and Response Document*.

Disposition of Surplus Highly Enriched Uranium Final EIS

Page Two  
Secretary Hazel O'Leary  
December 14, 1995

Despite our concerns, the State of Tennessee recognizes and appreciates the historic role Oak Ridge, Tennessee has played for the nation and the economic contributions DOE has made to the Oak Ridge community and Tennessee over the past 50 years. We will continue to promote and will accept our responsibility to the nation as a potential site for one or several of the complex suite of activities that DOE must perform. However, I believe that DOE's continued consideration of the most technically unsuitable disposal site in the DOE complex for large scale waste deposition is truly a waste of precious national and state resources. I urged you to invest your agency's energies in alternatives that better meet both the short and long term interests of waste storage.

Sincerely,



Don Sundquist

c: United States Representative Zach Wamp  
United States Senator Fred Thompson  
United States Senator Bill Frist  
Commissioner Don Dills, Tennessee Department of Environment and Conservation  
US DOE Headquarters PA Office  
Mr. Greg Rudy, Acting Director, Office of Fissile Materials Disposition  
NEPA File

STATE OF TENNESSEE, HOUSE OF REPRESENTATIVES,  
NASHVILLE, TN  
PAGE 1 OF 1

10.003: Comment noted.

BOB BARTON  
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HOUSE OF REPRESENTATIVES  
STATE OF TENNESSEE  
NASHVILLE


November 21, 1995

The US DOE  
Office of Fissile Materials Disposition  
Post Office Box 23786  
Washington, D.C. 20026

Dear Sir:

This letter is written in general support for Nuclear Fuel Services, Inc. of Erie, Tennessee.

I am impressed with the history Nuclear Fuel Services has with both safety and security. They have been a part of the nuclear industry for over 40 years. Nuclear Fuel Services is the type of small business operation I am happy to support. It is important that the plant will be considered for any future contracts or projects. The workers at Nuclear Fuel Services are capable of competing successfully.

Sincerely,  
  
Robert D. "Boo" Fulton, M.P.A., Ed.D  
RDF/bc

10.003



STATE OF TENNESSEE, JOHNSON CITY, TN  
PAGE 2 OF 2

NO-14-1995 16132 TN SEVTE PL029 615 741 5543 P. 02/92

Page 2  
United States Department of Energy  
Office of Fissile Materials Disposition  
November 14, 1995

This contract would mean close to 100 jobs for the people of Upper East Tennessee. I can assure you that this contract is not only wanted, but needed, and we appreciate the opportunity to compete for this very important project.

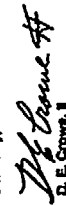
NES is one of those small businesses that has been so important to the economy of Tennessee, and has meant so much to the defense of our country and to the development of the kind of technology so important in the field of nuclear energy.

Again, I am very confident that not only will our facility produce this work for you at the lowest cost, but at the highest of quality in the safest and most secure way.

We appreciate this opportunity, and look forward to working with you as we turn "Swords into Plow Shares" and provide a new source of energy.

If I can be of assistance in any way, please don't hesitate to contact me at 1-800-300-CROW or 615-741-2454.

Sincerely,

  
D. E. Crowe, II

DEC:wac

10.003  
cont.



HEU EIS PUBLIC: JRAL COMMENTS AFTERNOON WORKSHOP Knoxville, Tennessee November 14, 1995	
SESSION: Discussion Group A	
OPEN DISCUSSION	
Facilities Capabilities	
What upgrades are required among the candidate sites in order for the commercial facilities and government facilities to perform the work and be in compliance? What new equipment, processes, facilities, and/or technologies would be needed to blend down the material?	22.010
If there is a potential need for new facilities to carry out the proposed actions, have they been adequately addressed in the EIS?	11.005
If the blending to UF <sub>6</sub> is the better way to deal with this material, why is this process only considered for the commercial facilities and not the government facilities?	01.002
Who will pay B&W or NPS to blend down the material, purchase new equipment, and store the wastes?	16.003
Is the private company who buys the fuel the one who will be responsible for the waste? Could the waste be sent back to a DOE facility? What happens to the waste from the commercial facilities operations? This issue needs to be expanded in the final EIS.	14.003
What are the criteria for deciding who gets what business? Y-12 can blend to metal. Would it be more cost effective to send the material to Y-12 or would it be sent to commercial facilities?	11.006
Cost is the biggest determining factor in deciding which process, government or commercial, will be used.	
Other Alternatives	
How far did DOE look into other issues/alternative uses of HEU? Did DOE use the national laboratories to look into these issues/alternatives?	09.012
In terms of the Nevada Test Site, what about putting the materials in small yield nuclear explosions to get rid of it?	09.004
DRAFTED November 9, 1995 REVISED December 13, 1995	

22.010: Site-specific upgrade requirements for each of the blending technologies are discussed throughout the HEU EIS; specifically in Sections 2.2.3.2, 2.2.3.3, 2.2.3.4, 2.2.3.5, 4.3.1, 4.3.2, 4.3.3, and 4.3.4. Each of the blending processes and the equipment needed for those processes are discussed in Section 2.2.

11.005: The HEU EIS assumes that no new facilities (buildings) would be needed to carry out the proposed actions, although modifications or additional equipment might be installed in existing facilities (such additions would be necessary to make UF<sub>6</sub> blending possible, for example). DOE has no plans to construct new facilities. If commercial entities choose to build new facilities for the HEU disposition program, additional NEPA review would probably be necessary, most likely in the context of NRC license amendment proceedings.

01.002: The ability to convert HEU in the form of metal or oxide to UF<sub>6</sub> does not currently exist at any facility. Because UF<sub>6</sub> blending would only be used for blending commercial material, it would only be developed if one of the commercial blenders decides it is economically preferable to its existing UNH blending capabilities. DOE does not intend to install new equipment for the purpose of competing with the private sector in a commercial market when it already has adequate UNH and metal (at the Y-12 Plant) blending capability.

16.003: The costs of undertaking HEU blending actions could initially be borne by DOE, by USEC, or by potential purchasers of the material. Any new equipment installed at commercial facilities would be at their own expense. It is fully expected that all costs of blending, including waste management, would ultimately be covered by the purchase price for commercial material.

14.003: Any utility purchaser of nuclear fuel derived from surplus HEU would be responsible for disposal of the resulting spent nuclear fuel. Under the *Nuclear Waste Policy Act*, DOE manages the Nation's civilian radioactive waste program in return for fees assessed on nuclear electricity generation, so the waste would eventually be sent to a DOE permanent repository (or possibly an interim storage facility). The process waste from commercial blending facilities would be handled the same as any other waste from those facilities—in regional LLW repositories governed by interstate compacts under the *Low-Level Radioactive Waste Policy Act*, as amended.

Comment Documents  
and Responses

TENNESSEE (KNOXVILLE), AFTERNOON WORKSHOP  
DISCUSSION GROUP A  
PAGE 2 OF 8

Environmental Safety and Health	
One benefit for blending down to fuel instead of waste would be eliminating the need to mine more uranium ore for fuel. I was not convinced by the EIS that there is a large demand for the fuel in the United States and that there would be no damage to the environment when blending down to fuel.	11.007
No data has been presented in the EIS that compares the impacts of blending down to fuel versus mining. Why haven't the impacts to the mining industry been fully addressed? There needs to be better discussions in the EIS on relative environmental impacts. Uranium mining is an issue that should be addressed in the EIS.	12.004
Worker and Environmental Protection	
What accident scenarios were used to compile the fact sheet for Oak Ridge and how were the numbers derived?	21.006
Does the accident analyses addressed in the document assume that the same accident occurs at each facility, such as earthquakes, transportation, etc.?	20.009
With regards to long-term proliferation, isn't it prudent to compare the issue of transportation risks to the risk of leaving the materials in a weapons-usable form? Which action poses the most risk; transporting the material or leaving the material in a weapons-usable form where it is presently located? There are risks associated with the blend down and no action alternatives. The risks of proliferation should be compared with the risks associated with transporting the materials to the blending facilities. This information should be addressed in the EIS.	06.009
I understand that 4% blend down of HEU can be treated with nitric acid to make Pu. You can get 4% Pu from blending down the material from commercial reactor fuel. Can this 4% Pu from down blending the material from commercial reactor fuel be used to make a weapon?	06.020
Once HEU is blended down into fuel, could it become HEU again?	32.007
The public has a right to know what will be done with the material in their area, even if it comes from abroad or if impacts are low. The public needs the facts to be able to make an educated decision.	06.024
The public should be notified of any potential actions that will be taken and an epidemiological study should be conducted for cancer, etc.	32.008
This action (blending to fuel) would be great for generating jobs and turning weapons into fuel, but I am not sure I want to take the risk of blending the Russian fuel. DOE needs to hold a forum at the local level, and not require the participants to have to drive so far to attend.	
BRV/SPD December 7 1995	

11.006: Decisions about which facilities get blending business from this program are most likely to be decided on the basis of competitive bidding procedures that may be conducted by USEC or other entities, in addition to DOE. The metal blending capabilities at the Y-12 Plant would only be used to blend noncommercial material for disposal as waste, since metal blending would not be conducive to subsequent commercial use.

09.012: Retaining and using surplus HEU in weapons-usable forms would not be consistent with the purpose and need for the proposed action. As explained in Section 2.1 of the HEU EIS, DOE used a formal screening process and public input to identify a range of reasonable alternatives for the disposition of HEU. The process was conducted by a screening committee that consisted of five DOE technical program managers, assisted by technical advisors from DOE's national laboratories and other support staff. The committee compared alternatives against screening criteria, considered input from the public, and used technical reports and analyses from the national laboratories and industry to develop a final list of alternatives.

09.004: The United States has discontinued nuclear tests or other nuclear explosions as part of its nonproliferation policy.

11.007: Section 4.7 of the HEU EIS discusses the positive impacts from avoided uranium mining, milling, and enrichment. The more than 100 commercial reactors in the United States (and hundreds more overseas) create a steady demand for uranium fuel. The environmental analysis in Chapter 4 of the HEU EIS indicates that blending HEU down would result in few significant impacts.

12.004: The Department of Energy continuously assesses the impact of introducing uranium from its inventory into the U.S. uranium market. DOE is required by the terms of the *USEC Privatization Act* to avoid introducing uranium into the market in a manner that would have adverse material impacts on the domestic uranium industry. The impacts on the uranium and nuclear fuel cycle industries are detailed in Section 4.8 of the HEU Final EIS.

Weapons Potential/Risk

It might be better to use Alternative 2 (blend to waste), so proliferation will not be an issue. | 10.009

If DOE would take USBC out of the picture, wouldn't DOE still have an obligation to comply with various treaties, to blend down the material from other nations to make it unusable? | 03.007

Is there a treaty for Pu and HEU? Do we have an obligation to dispose of these materials? | 03.008

Transportation

If most of the material is at Y-12, and Y-12 has the capability to process it into metal or the oxide form, why does DOE want to transport the material all over the country if it can all be done at Y-12? Will the transportation cost and risks be a factor in determining where the material will be transported and processed? | 20.006

Does the burden of the accidents fall on the person that buys the fuel? | 06.010

If the alternative was to blend down to waste, who is the customer? | 11.008

Would cost be the most important factor in the decisionmaking process? | 29.001

If the alternative was chosen to blend down to waste, would all four sites participate in this action? If the decision is to blend down to commercial fuel, who will make the decision at which site to blend down the material? If the customer decides to blend down the material, would it be feasible to think that all four candidate sites would bid on the work, or would DOE make the decision which sites got what material? Can DOE assume that the candidate sites will be available when the decision is finally made as to where the blending will take place? Can the customer decide who will blend the material down and who will transport it? How will the decision on which commercial or government facility will do the work be made? | 11.008 cont'

Costs

Can DOE recover the cost of what it took to make the material? Does DOE have an estimate of the cost per kilogram that it took to make the material versus today's market value? | 04.007

How do you evaluate today's market value of the fuel? | 16.004

Socioeconomics - Labor

Workers in Oak Ridge are losing their jobs. Why wouldn't DOE select the site to blend down the material in a place where jobs and the work is needed? | 10.008

**21.006:** Several accident scenarios were considered for the HEU EIS including a tornado, straight winds, an aircraft crash, nuclear criticality, process-related accidents, and an evaluation basis earthquake. As stated in Section 4.3, it was assumed that with the exception of the filter fire and the fluidized bed release, all of the accident scenarios considered in the EIS could be initiated by the evaluation basis earthquake. The evaluation basis earthquake is also assumed to initiate the nuclear criticality and the UF<sub>6</sub> cylinder release. To be conservative, the consequences from the evaluation basis earthquake, earthquake induced criticality, and the UF<sub>6</sub> cylinder release were added to yield the total consequences from both the release of radioactivity and hazardous chemicals into the environment and a criticality.

Because details on some of the site-specific processes were proprietary, one set of representative data were used in the HEU EIS for each blending process with nominal throughput rates that assumed a full-scale operation with bounding values for operational requirements, emissions, waste streams, and other parameters. Therefore, the same accident scenarios representative of each blending process were used at each site.

**20.009:** Continued storage does not reduce the inventory of weapons-usable material, which is the purpose of the proposed action. It would be unreasonable to compare storage (no action alternative) impacts with only part of the potential risk (that is, transportation) encountered for the other alternatives. However, the total impacts for each alternative are presented and compared. Transportation impacts are specifically addressed in Section 4.4 and Appendix G of the HEU Final EIS.

**06.009:** Neither blending down of HEU nor treatment with any chemical can make Pu. However, blending HEU to 4-percent LEU and using it as fuel in commercial reactors results in the creation of some Pu in the spent nuclear fuel. Only reactors can make Pu. It is possible to reprocess the resulting spent fuel by dissolving it in nitric acid and using other chemicals to separate Pu, but because spent fuel is extremely radioactive, the process is very hazardous and difficult and must be carried out by remote control in heavily shielded cells. This is the process that was used to make the Pu used for the nuclear weapons in the first place, but it has never been accomplished by any subnational group. Because of the difficulty of separating Pu from spent fuel, spent fuel is considered highly proliferation resistant for at least 80 to 100 years after it is removed from reactors.

TENNESSEE (KNOXVILLE), AFTERNOON WORKSHOP  
DISCUSSION GROUP A  
PAGE 4 OF 8

Are the costs of Section 3161 included as part of the analysis? What if the work goes elsewhere outside DOE?	24.005
The City of Erwin would experience positive economic impacts if the jobs came to NFS. The NFS union could use the jobs.	10.003
What is the time limit of storage and the amount of materials that can be stored at the blending site?	26.005
<sup>1</sup> Oral comments received in public meetings concerning similar issues were combined (grouped) for presentation in this document.	

06.020: Once HEU is blended down to 4- or 0.9-percent LEU, it could become HEU again only if it were re-enriched. It would be no less difficult to turn such LEU back into HEU than it would be for any of the much more plentiful world stocks of LEU of comparable enrichment levels.

32.007: The Department of Energy supports the public's involvement and is fully committed to giving the public access to information about its activities and opportunities for involvement in DOE's decisionmaking process. In this regard, the Office of Fissile Materials Disposition published a Notice of Availability in the *Federal Register* (60 FR 54867) on October 26, 1995 that announced that the HEU EIS was available for comment; provided the dates of the comment period and the schedule of public meetings; and identified the methods by which to submit comments. Additional information, including newsletters and fact sheets, were distributed directly to interested members of the public who are on the office's mailing list. The office also maintains an electronic bulletin board that provides current information, program status and activities, and the ability to interact with the office directly.

Health effects studies are discussed for each candidate site in Chapter 3 of the HEU EIS. Impacts of the proposed action and alternatives on public and worker health from both normal and potential accidents are addressed in Chapter 4. No actions will be taken until the decisions are made public. The ROD is scheduled to be published in the *Federal Register* in the summer of 1996.

06.024: The purpose of the U.S.-Russian HEU agreement is to reduce the threat to U.S. and world security that is posed by large stockpiles of surplus Russian HEU, as well as to provide needed hard currency to Russia to assist its redevelopment efforts. The U.S. effort that is the subject of the HEU EIS is reciprocal to the Russian effort to reduce its HEU stockpiles.

32.008: The Department of Energy must work within the constraints imposed by available funding and resources. Because DOE is trying to reduce costs of complying with the NEPA, and due to the geographical proximity of three of the four candidate sites identified in the HEU EIS, DOE determined that two public meetings (Knoxville, TN and Augusta, GA) would be appropriate for this program.

Because public involvement is critical to the success of the program, other methods for submitting comments were also made available throughout the comment period: toll-free fax and voice recording, electronic bulletin board, and U.S. mail. These methods can also be used to request additional information or to be placed on the Office of Fissile Materials Disposition's mailing list.

**10.009:** Blending down the entire stockpile of surplus HEU to less than 1 percent and disposing of it as waste was evaluated in the HEU EIS as one of the alternatives. The analyses showed that this alternative would generate the highest environmental impact among other alternatives evaluated in the HEU EIS (Table 2.4-2). DOE has developed cost estimates associated with the alternatives analyzed in the HEU EIS and has made them available in a separate document with the HEU Final EIS. The cost analysis indicates that commercial use of LEU fuel derived from surplus HEU makes economic sense and would save billions of dollars compared to the alternative of blending HEU for disposal as waste. DOE believes that all of the action alternatives (2 through 5) evaluated in the HEU EIS meet the objective of nonproliferation and will send a positive message to other nations.

**03.007:** It is correct that the foreign policy objective of reducing global stockpiles of weapons-usable fissile materials would remain without regard to USEC's role. USEC's involvement stems from the provision of the *Energy Policy Act* of 1992 that makes USEC the exclusive marketing agent for sales of U.S. Government and Russian enriched uranium. There are at present no international treaties concerning disposition of fissile materials. However, the *Joint Statement between the United States and Russia on Nonproliferation of Weapons of Mass Destruction and the Means of their Delivery* (January, 1994, reproduced as Appendix B of the HEU Final EIS) provides a bilateral framework for U.S.-Russian nonproliferation efforts. In addition, the President's *Nonproliferation and Export Control Policy* (September 1993, reproduced as Appendix A of the HEU EIS) commits the United States to "seek to eliminate where possible, the accumulation of stockpiles of HEU or Pu to ensure that where these materials already exist they are subject to the highest standards of safety, security, and international accountability." The U.S. Government is pursuing fissile materials disposition on a unilateral basis, to set an example for other nations, and to reciprocate similar actions already being taken in Russia.

03.008: There is no treaty related to Pu or HEU. However, the joint statement between the United States and Russia on *Nonproliferation of Weapons of Mass Destruction and the Means of their Delivery* (January 1994, reproduced as Appendix B of the HEU Final EIS) provides a bilateral framework for U.S.-Russian nonproliferation efforts. In addition, the President's *Nonproliferation and Export Control Policy* (September 27, 1993, fact sheet included as Appendix A of the HEU Final EIS) commits the United States to "seek to eliminate where possible, the accumulation of stockpiles of HEU or Pu to ensure that where these materials already exist they are subject to the highest standards of safety, security, and international accountability."

20.006: Assessment of impacts resulting from the proposed action were conducted at sites where facilities for UNH and metal blending processes currently exist and would not require new construction even for a new UF<sub>6</sub> capability at commercial sites. This provides the decisionmaker a reasonable range of site options to consider. However, because environmental and transportation related risks are low for all alternatives, it is anticipated that decisions on blending locations will be a function of material forms, availability of facilities when needed, and business decisions.

Transportation risk assessments showed that risks would be only slightly lower for blending to LLW at ORR. For blending to fuel feed material as UNH crystals, ORR is not the lowest risk alternative. Two significant factors contributed to these conclusions: (1) onsite material handling represents the greater part of the total risk, and such handling would still be necessary even to blend at ORR, and (2) the highest transportation risk for these scenarios is not in transporting HEU, but in transporting the significantly larger volume of fuel feed material and LLW after blending.

06.010: It is not clear what accidents the question refers to. In general, the burden of nuclear accidents falls on whatever party has legal possession of nuclear material at any given time. The *Price-Anderson Act* establishes a framework of liability coverage for nuclear accidents. For the private nuclear industry, that framework includes private insurance and retroactive liability that is shared across the entire nuclear industry. The Government is self-insured.

11.008: If the decision were made to blend all surplus HEU to waste, there would be no customer in the commercial sense. The material would be blended by or on behalf of

DOE for disposal as waste. Any or all of the facilities could be involved in such blending. It is not possible to specify today where blending would take place for either waste or commercial material, since those decisions will depend in part on the forms of the business transactions governing particular disposition actions. Decisions about blending sites and transportation could be made by DOE, by USEC, or by other entities involved in those transactions. It is very likely that competitive bidding procedures will be instrumental in such decisions.

**29.001:** Cost will play a key role in the decisionmaking process. The Preferred Alternative identified in the HEU Final EIS is to maximize commercial use of the material, because it would recover the material's economic value and satisfy the nonproliferation objective in the most timely manner.

Preliminary cost estimates suggest that 170 t of surplus HEU may have a net commercial value of approximately \$2 billion. More importantly, avoiding disposal costs for the same amount of material would save the Government between \$5 and \$15 billion.

**04.007:** The Department of Energy has no expectation of recovering the invested costs of producing HEU, which have been very high. (The marginal cost of enrichment goes up as enrichment levels increase.) DOE has no reliable basis for estimating the actual cost of producing HEU. The current question is whether recovery of those invested costs can be at least partially offset by commercial use of the material or completely written off by making it all into waste.

**16.004:** The value of LEU fuel derived from surplus HEU has been evaluated as part of cost estimates for the alternatives in the HEU EIS that have been released separately from the HEU Final EIS. The value of commercial material is expected to be equivalent to market value for any other commercial LEU. Off-spec material is expected to be discounted to reflect its lower value.

**10.008:** The Y-12 Plant is one of the four alternative sites evaluated in the HEU EIS as having the capability to provide uranium blending processes. To be in compliance with NEPA, the HEU EIS must assess the environmental impacts of the proposed action and alternatives at all potential candidate sites without favoring one over another and provide this information to the decisionmakers.

**24.005:** Cost analysis is not part of the HEU EIS, although cost estimates for the alternatives have been developed to be included in the ROD(s) and are available as a separate document. It is anticipated that the work needed to blend down surplus HEU will be done using both DOE and commercial sites. To the extent that work is done within DOE, the requirements of Section 3161 of the *Defense Authorization Act* of 1994, as applicable, will be complied with.

**10.003:** Comment noted.

**26.005:** Storage limitations of uranium materials differ at each candidate blending site. Interim storage of enriched uranium at the Y-12 Plant is limited to 500 t of HEU and 6 t of LEU for a period of up to 10 years (60 FR 54068, October 19, 1995). There are no limitations on the storage of uranium at SRS. The quantity of uranium that could be stored at commercial sites are limited by their NRC licenses. B&W and NFS are licensed to possess up to 60,000 kilograms (kg) (132,000 pounds [lb]) and 7,000 t (15,400 lb), respectively, of U-235 in any required chemical or physical form (except UF<sub>6</sub>) and at any enrichment (see Sections 2.2.3.4 and 2.2.3.5 of the HEU EIS).



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Impacts

Although the overview presenter indicated that there were no environmental problems associated with any of the candidate sites, there was a release of UF<sub>6</sub> at NFS in 1979 which was never adequately explained to the public and certainly represents a potential danger to the public and the environment. The EIS should deal with this issue and clarify the potential safety and health impacts associated with this facility.

21.003

DOE needs to quantify the potential releases to groundwater, aquifers and air from the proposed actions. [Participant referred to Section S-2, Table summary on page S-24, and Chapters 4.3 and 4.5 for annual and total campaign impacts, respectively.]

22.005

DOE needs to compare accidental releases versus chronic releases

21.004

DOE needs to clarify the different impacts at different sites, i.e., why is the environmental justice impact high at the Savannah River Site? Why does NFS have higher dose rates?

24.002

What are the differences in environmental impacts associated with keeping weapons-grade materials in storage compared to risks of transportation to various blending sites? How is the safety of its transport being ensured? Is transportation expensive?

21.005

20.005

Who decides what will be done with the HEU?

01.001

Alternatives

DOE should clarify and compare the proliferation risks associated with each alternative, especially indicating that increasing commercial use of HEU also increases the proliferation potential

03.001

How does the criteria of setting a good example to other nations relate to the various alternatives being considered?

03.002

What are the economic costs associated with each alternative?

16.009

What proliferation potential is associated with each fuel?

03.003

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217-751-5123-1

21.003: The UF<sub>6</sub> release that occurred on August 7, 1979 was reported in the *Environmental Assessment for Renewal of Special Nuclear Material License SNM-124, Nuclear Fuel Services, Inc., Erwin Plant, Erwin, Tennessee*, Docket No. 70-143, dated August 1991. As described on page 4-38 of the environmental assessment the quantities released to the atmosphere increased rapidly to a maximum within 10 to 15 minutes and then slowly decreased as material circulated out of the process ventilation and out of the stack. Most activity (60 to 80 percent) was released in 1 hour, although it took about 3 hours for all the activity to escape. The incident was investigated by NRC. The quantities released were within regulatory levels. After this event, the scrubbing system was redesigned and modified to improve the system. Detection systems with alarms were also installed at the work station.

The HEU EIS analyzed radiological releases from UF<sub>6</sub> blending process during normal operations of NFS as well as under a severe accident condition during which the highest atmospheric release of radioactivity and hazardous chemicals would occur. The accident scenarios evaluated in the HEU EIS included the release of UF<sub>6</sub> from a cylinder leak similar to what occurred at NFS in 1979. Section 4.3.2 of the HEU Final EIS presents impacts of blending HEU to 4-percent UF<sub>6</sub> to the public and the environment.

22.005: Potential releases to air from the proposed action were estimated and presented in Section 4.3 of the HEU EIS. However, it was determined that there would be no hazardous waste released to the surface or groundwater during blending operations. All hazardous waste would be treated until it becomes nonhazardous and, after treatment, would then be released to an NPDES-permitted outfall.

21.004: The HEU EIS analyzed both accidental and chronic releases of HEU from the proposed alternatives. Chronic releases are very small releases of material to the environment over a long period of time. Accidental releases are releases of material to the environment over a very short period of time to an instantaneous release. The impacts of chronic and accidental releases from normal operations and accidents, respectively, were evaluated for each alternative blending process and presented in Section 4.3 of the HEU Final EIS.

24.002: Differences in current conditions at each site lead to different potential impacts at each site. For example, the area surrounding SRS has a higher minority population than

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DOE needs to clarify the results of Alternative 2 (blend all HEU to waste) compared to nonproliferation concerns and highlight the fact that this alternative takes much longer, is much more expensive than Alternatives 3, 4, & 5 (the commercialization alternatives), and does not make the material any more nonproliferation resistant.	03.004
Comparison of the alternatives should highlight that we will get rid of more HEU faster if we go with one of the commercial alternatives.	11.003
Other	
DOE should clarify the point that both enrichment and reprocessing are more difficult procedures than blending down.	11.004
When discussing proliferation resistant advantages of blending down HEU, DOE should clarify the point that it is still easier to make weapons from HEU blended down to 1% than it is from irradiated spent nuclear fuel.	03.005
Has DOE considered the size capabilities of K-25 at Oak Ridge, Portsmouth in Ohio, and Paducah in Kentucky?	09.002
Are the residents other than candidate site employees in the communities around Erwin, TN and Lynchburg, VA being informed of this project?	32.006
Is there really a market for LEU?	04.002
DOE should emphasize the fact that proliferation concerns and perceptions thereof are the real drivers, not finances and economic recovery.	03.006
It is economic insanity to destroy this resource.	04.003
What do the different forms of HEU look like and where is it currently being stored?	33.001

the area around any of the other sites. Therefore, SRS may have a disproportionate environmental justice impact.

**21.005:** NFS has higher dose rates than other candidate sites because it is the smallest site in land area, and thus the receptors are closer. The potential impacts of any release of HEU are a function of the amount of material released (source term), the dispersion of the material into the atmosphere (related to the site meteorology), and the distance to the nearest receptor (the worker or member of the public). Since the source terms are identical, only the distance to the nearest receptor and meteorology will make significant differences in the dose rate. The closer the receptor to the source term, the larger the calculated dose rate will be (in much the same way that the closer someone is to a fire [the source term], the more heat [the dose rate] they would feel).

**20.005:** The purpose of the proposed action is to reduce HEU to non-weapons-grade for commercial use. Long-term storage would not achieve this. The HEU EIS weighs the total impacts for the alternatives, but does not compare storage with only part of the potential risk that might be encountered (that is, transportation). As explained in Section 4.4 of the HEU Final EIS, HEU would be transported by safe secure trailers, a conveyance that provides optimum safety and security. For example, there has never been a safe secure trailer accident involving a release of radioactive material causing injury or death. Transportation cost was not evaluated in the HEU EIS; however, it is relatively inexpensive when compared to the long-term storage.

**01.001:** The Department of Energy will make programmatic decisions whether surplus HEU should be blended for commercial use or for waste. Subsequently, DOE will make decisions about specific lots of HEU for disposition. Decisions about blending locations for commercial material may be made by DOE or USEC or other entities involved in disposition actions. Decisions about blending for waste materials are likely to be made by DOE.

**03.001:** The Department of Energy does not agree that commercial use of LEU derived from HEU increases proliferation potential. Among the alternatives considered, Alternative 1, the No Action Alternative, has the highest proliferation potential because it leaves

the HEU in weapons-usable form. DOE considers Alternatives 2 through 5, which represent blending different portions of the surplus HEU to waste or fuel, as roughly equivalent in terms of proliferation potential, and much more proliferation resistant than the HEU in its present form. That is, LEU at both 4- and 0.9-percent enrichment, and spent fuel are all considered to have low proliferation potential, because both enrichment of uranium and reprocessing to separate Pu are difficult and costly.

**03.002:** The program objective of setting a good example for other nations relates to converting weapons-usable fissile materials to forms that are no longer weapons-usable; (that is, to demonstrate to other nations that our nuclear disarmament actions are permanent and irreversible). It is in the national security interest of the United States that other nations take similar actions to reduce stockpiles of weapons materials, so the United States is obligated to take such actions itself. All four of the action alternatives in the HEU Final EIS (Alternatives 2 through 5) satisfy this objective by seeking to blend all of the surplus HEU to LEU. Only the No Action Alternative, which would leave the HEU in its present weapons-usable forms, would fail to satisfy this nonproliferation objective.

**16.009:** Cost estimates for the alternatives analyzed in the HEU EIS have been developed for inclusion into the ROD(s) and are available in a separate document with the HEU Final EIS. The cost analysis supports DOE's preliminary conclusion that commercial use of LEU fuel derived from surplus HEU would save billions of dollars compared to the alternative of blending HEU for disposal as waste.

**03.003:** Although spent fuel contains Pu, which if separated is a weapons-usable fissile material, spent fuel is extremely radioactive and hazardous to handle; thus, it is difficult and costly to separate Pu from spent fuel. In accordance with recommendations of the National Academy of Sciences, it is the policy of the United States to make weapons-usable fissile materials at least as proliferation resistant as commercial spent fuel.

**03.004:** The Department of Energy agrees that blending all surplus HEU to waste would be much more costly and take longer than options that make commercial use of the material. It also would have greater adverse environmental impacts. However, it must be

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included in the HEU EIS to assure that a "range" of alternatives has been analyzed. DOE also agrees that blending to waste offers no nonproliferation advantage over blending for commercial use.

**11.003:** Section 2.1.2 of the HEU EIS indicates that, under some circumstances, maximizing commercial use reduces the time needed to complete disposition actions.

**11.004:** The HEU EIS indicates in the text box in Section 1.1.1 that blending down is much easier than enrichment. DOE agrees with the commentor that reprocessing is also very difficult relative to blending HEU down to LEU.

**03.005:** The Department of Energy considers the re-enrichment of uranium from material blended down to 1 percent and reprocessing of spent fuel to recover Pu to be comparably difficult barriers to proliferation.

**09.002:** The gaseous diffusion enrichment plants at Paducah and Portsmouth have the capability to deal with HEU only in the form of UF<sub>6</sub>. The K-25 Site at ORR is permanently closed. Since the surplus HEU is in the form of metal or oxide, not UF<sub>6</sub>, those facilities cannot be used for the blending activities.

**32.006:** The Department of Energy supports the public's involvement and is fully committed to giving the public access to information about its activities and opportunities for involvement in the DOE's decisionmaking process. In this regard, the Office of Fissile Materials published a Notice of Availability in the *Federal Register* (60 FR 54867) on October 26, 1995, that announced that the HEU Draft EIS was available for comment; provided the dates of the comment period and the schedule of public meetings; and identified the methods by which to submit comments. Additional information, including newsletters and fact sheets, were distributed directly to interested members of the public who are on the office's mailing list. Regional print and media advertisements were also used to draw attention to the public meetings and other methods available to submit comments. The office also maintains an electronic bulletin board that provides current information, program status and activities, and the ability to interact with the office directly.

**04.002:** The Department of Energy does not expect to have any difficulty marketing the commercial material at market rates. Off-spec material will probably need to be marketed at discounted rates to compensate for the added processing and operational requirements for its use. The uranium market is now a global one, involving numerous competitors. DOE expects that LEU derived from surplus HEU will be introduced into the market at rates that do not have an adverse material impact on the market.

**03.006:** The Department of Energy agrees that the nonproliferation objectives are pre-eminent; however, the recovery of some of the costs involved in creating this HEU are also very important, particularly in the current budgetary climate. Fortunately, the two objectives are complementary in the HEU disposition program.

**04.003:** The Department of Energy's preference is to utilize as much as possible of this resource as LEU reactor fuel derived from surplus HEU.

**33.001:** Forms of surplus HEU are mainly metal, compounds, solutions, oxides, irradiated fuel, reactor fuel, UF<sub>6</sub>, scrap, and material in weapons that have been retired but have not been transferred to Pantex for disassembly. Surplus HEU is currently located at 10 DOE sites around the country and is shown in Figure 1.3-1 of the HEU Final EIS.

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ISSUES

What type or level of effect does each of these alternatives have on proliferation?	03.009
Which alternative (disposition as waste versus disposition as fuel) generates the most jobs?	24.001
Timing -- How rapidly could this blending down take place and what are the potential effects on the economy? Will the need for additional fuel impact the timing of DOE action?	05.002
What are the environmental impacts of disposing of all these canisters?	06.011
How much earth needs to be moved in order to get one pound of uranium or one pound of fuel from natural uranium ore? What are the impacts? How big will the hole in the ground be after the ore is mined?	
What's the worldwide demand in comparison to the fuel that would be generated from the blend down and where is it going to be stored (fuel)? If the production is above the demand then where would the surplus be stored?	17.012
Where is all the commercial demand coming from? Why do we expect an increase in the use of nuclear power?	13.002
The electrical industry is being deregulated and this will have a negative impact on the industry. There hasn't been a good analysis of the actual demand.	13.003
OPEN DISCUSSION	
What Are the Preferred Sites?	
Does this EIS include full production input at all the sites?	11.010
Does this document identify a preferred site? Is it set up as a generic document or a site-specific document? Regardless of what site is selected this document will stand? Does the EIS identify preferred sites with the preferred alternative? There may be some materials or mixtures of materials that will preclude ORR, SRS, B&W or NFS.	07.002

<sup>1</sup>REVISED December 7, 1995

03.009: Among the alternatives considered, Alternative 1, the No Action Alternative, has the highest proliferation potential because it leaves the HEU in weapons-usable form. DOE considers alternatives 2 through 5, which represent blending different portions of the surplus HEU to waste or fuel, as roughly equivalent in terms of proliferation potential, and much more proliferation-resistant than the HEU in its present form. That is, LEU at both 4- and 0.9-percent enrichment and spent fuel are all considered to have low proliferation potential, because both enrichment of uranium and reprocessing to separate Pu are difficult and costly.

24.001: The largest number of direct jobs generated would be 126 for blending HEU to LEU as UF<sub>6</sub> (disposition fuel). The largest number of total jobs (direct and indirect) generated would be 444 in the ORR region. These jobs would be created as a result of blending HEU to either waste or fuel. There would be no difference between fuel or waste alternatives in terms of the total number of jobs created.

05.002: The Department of Energy estimates that the shortest time to blend 200 t of surplus HEU would be about 20 to 25 years, assuming all four blending sites were used. DOE expects that the commercial material in current surplus HEU will take between 15 and 20 years to blend, and material that must be blended to waste could take 10 to 15 years. DOE expects the demand for uranium fuel to remain essentially steady for the foreseeable future.

06.011: The environmental impacts from disposal of radioactive wastes are being analyzed in other NEPA documents together with the much larger quantities of radioactive waste that must be managed by DOE. As explained in Section 1.4.2 of the HEU Final EIS, the disposal of LLW generated as a result of this program will be addressed as part of DOE's *Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* and any site-specific or project-specific EIS's concerning LLW repositories.

17.012: Material will generally not be blended down until it can move promptly into the pipeline for either commercial use or disposal as waste, so there is no need for extended storage of blended down product. As stated in Section 4.8.1 of the HEU Final EIS, the U.S. surplus HEU would represent about 2 percent of the world market for uranium.

How and where has the blend down technology been tested? And is it the best technology?	01.004
DOE oversight office is not even if this technology is in existence -- so how many years has the blending technology been carried out at each site? How long has B&W been doing blend down? Are we getting double talk? DOE has stated that all of the sites have blended down the material to 1% or 4%. What are you saying, that B&W has not?	
Can these people/sites blend the material down to 4% on-spec in the time frame given in the EIS?	05.006
What are the criteria for selecting SRS, ORR, B&W or NFS?	07.008
What is the specific composition of the materials? What is classified, the amount or the locations of the surplus HEU?	02.001
What drives DOE's selection of a specific site? Least cost or least risk?	08.003
Transportation Risks	
How much material is transported per truckload?	20.002
Has the EIS looked at the ratio of accidents between transporting waste versus LEU?	19.001
Isn't there a difference in transporting the material in safe secure trailers (SSTs) as opposed to Joe Blow Transportation hauling the waste? Is the probability of accidents lower when transporting the materials in safe secure trailers (SSTs)?	20.003
Are trucks the normal or best way to move the material?	
If a truck carrying 1% material crashes on I-40 what would be the accident scenario? What would the ground look like? What are the environmental and health effects? Please explain for both 1% and 4% material.	20.010
Proliferation Differences	
When the HEU is blended down it would be run through commercial reactors and you end up with more weapons-usable fissile materials. Would there be more weapons-usable materials after processing in commercial reactors? If so, how much?	03.010
The period of 8 years versus 46 years throughput -- I would like to suggest that if the 46 years were changed to 8 years we would have more jobs in the short term.	05.005
What makes us believe that these utilities will purchase the materials from the United States over the other available materials?	

13.002: The demand for HEU-derived uranium would come from the approximately 100 nuclear electric power plants operating in the United States and hundreds of others overseas. There is no expected increase in the number of these power plants in the United States.

13.003: There is consideration of deregulation of the electrical supply industry, but that has not happened yet and no one can be sure what form it will take or what its impact will be. At this time, there is no deregulation data to analyze. The demand for uranium in the United States is continuously analyzed by numerous firms specializing in the uranium market. These analyses predict essentially steady demand for uranium at 165 million pounds U<sub>3</sub>O<sub>8</sub> per year worldwide. The United States uses about 45 million lbs U<sub>3</sub>O<sub>8</sub> per year and produces only about 6 million lbs.

11.010: The HEU EIS analyzes generic processes for the various blending technologies at all of the sites. Generic process rates are also applied based on rates that all of the facilities could achieve. It is possible that some of the facilities could process material at higher rates, although it is unlikely DOE could make material available for blending at higher rates.

07.002: The HEU EIS is programmatic in the sense that it will support programmatic decisions (for example, as proposed, to make commercial use of surplus HEU). The Preferred Alternative in the HEU Final EIS does not include any site preferences. The document concludes that the necessary blending activities could take place at any of the analyzed sites without significant adverse impacts. Thus, environmental considerations are not considered likely to drive site decisions, which may be made by parties other than DOE. If subsequent decisions concerning disposition of specific lots of HEU fall within the parameters analyzed in the EIS in terms of sites, quantities, and processes, it is expected that no additional NEPA documentation will be required.

01.004: Uranyl hydrate hexahydrate blending technology is in existence at all four facilities, and metal blending technology exists at DOE's Y-12 Plant. While all of the facilities have engaged in some blending as part of their past operations, blending to pre-

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What makes us believe that these utilities will purchase the materials from the United States over the other available materials?	13.004
This EIS is suppose to be driven by proliferation concerns and after the first three pages the document focuses on money. DOE states that the President's nonproliferation policy -- not economics drives this EIS. You could have just as easily stated that money and not proliferation concerns drive this document.	06.015
Maximum commercial use equals maximum proliferation risks. Resulting fuel could be sold internationally. If other countries are looking at the process then they see we have spent fuel and the ability to reprocess -- no one in this room can give assurances that it won't turn back into bomb materials in other countries. If we look at the proliferation issue then the 1% enrichment alternative is the way to go. Could someone turn all the material into bomb material?	03.017
The world is watching what we are doing and so we should be very clear and specific in our actions.	06.017
Will the IAEA follow the spent fuel into another country and track it as fuel? How wide spread is the IAEA membership -- how many countries belong?	03.011
Does the EIS take a sample of 50% of the material -- then is 50% of material something else? Are some of the scraps from Rocky Flats included in the material analyzed in this document? Does this material contain other stuff? I would like clarification of what is included in the materials analyzed in this EIS. Is 50% pretty accurate? What is the other stuff?	06.019
If 50% of the material is U-235 then what is contained in the other 50% of the material?	
Basis for Selection of Alternative Five	
Why and what contributed to the selection of the preferred alternative?	07.004
Isn't time one of the major factors involved in the process? Why not share the materials between all four sites? Blend down the material as quickly as possible.	05.013
Each company will encounter some problems. There are always some problems associated with this type of work. I have dealt with NFS and they have been very open and forthcoming with information. East Tennessee is economically depressed so the jobs created by this action would be great.	10.003
Why would you consider blending the material to waste, it does not make sense.	10.014
If you blend down the material to waste -- the uranium will never go away. We don't make a dime -- why not blend and sell -- why not make profits?	
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cisely 0.9 or 4 percent has probably not been done because HEU has never before been blended down either for commercial use or waste. The point is, the technology for blending at higher enrichment levels is the same as would be used to yield the lower level products for this program, except more blending and blendstock would be needed. There is no environmentally consequential difference between the experience these facilities have and the proposed actions.

05.006: The timeframes presented in Table 2.1.2-1 of the HEU Draft EIS were rough estimates and are considered optimistic. They were based on the assumption that the sites can process material at the analyzed rates (up to 10 t per year) and that DOE can provide material for blending at up to 40 t per year in the case of using all four sites simultaneously. The HEU Final EIS is revised to reflect more realistic assumptions. In actuality, DOE could not provide material that quickly. DOE expects that a realistic estimate of the time needed to blend material for commercial use will be 15 to 20 years.

07.008: The sites that are considered in the HEU EIS are the two commercial and two DOE sites that can process significant quantities of HEU today. The Preferred Alternative contemplates the use of all four sites, although some alternatives or processes cannot be performed at all sites, as explained in the EIS. DOE does not expect to select the exact timing or use of the commercial and DOE sites in its ROD. It will make programmatic decisions whether surplus HEU should be blended for commercial use or for waste, and may also include decisions to proceed with disposition of one or more initial discrete batches of HEU. Decisions about where blending will occur will be based on business considerations, facilities being available when needed, transportation considerations, and competitive bidding processes. The commentor is correct that the forms and locations of some batches of HEU may militate strongly in favor of particular sites for blending.

02.001: Highly enriched uranium is primarily metal, uranium oxide, and UF<sub>6</sub>. Most of the amounts and forms of surplus HEU at specific locations have been declassified and were made available in the Secretary of Energy's *Openness Initiative* announcement on February 6, 1996. The newly-released information is indicated in Figure 1.3-1 of the HEU Final EIS.

08.003: The HEU Final EIS indicates that risks would be comparable and quite low at all sites. Thus, the selection of sites for blending, which may be done by USEC or other



If you blend it to fuel, you don't have more time to find a repository. Blending to fuel ignores the issue that there is no repository for spent fuel.	14.006
Spent Fuel	
When does DOE begin to grapple with the issue of spent fuel? If we blend down the HEU we continue to add to the inventory of generating spent fuel. We should blend down the material to 1% and get it out of the cycle by disposing as low-level waste. Economic and environmental impacts are skewed because the issue of spent fuel is not dealt within this document.	14.011
	10.009
Is there any economic incentive to blend to 1% over the 4% LEU?	04.006
<sup>1</sup> Oral comments received in public meetings concerning similar issues were combined (grouped) for presentation in this document.	

entities as well as DOE, would probably be dictated primarily by business considerations and the results of competitive bidding processes.

20.002: The quantity of material per truckload (shipment) varies, depending on the alternative and type of material. For example, under the alternative to produce UNH for commercial use, a truckload would contain 48 packages of surplus HEU, 35 kg per package (77 lbs), or 1,680 kg (3,696 lbs) of surplus HEU per truckload. Table G.1-3 of the HEU Final EIS presents the quantity of each material transported in the assessment.

19.001: Yes. The maximum annual transportation impacts would be 0.038 fatalities for transportation of LLW and 0.061 fatalities for LEU destined for commercial fuel fabrication. A cumulative summary of transportation environmental impacts is presented in Table 4.4.3.3-1. The accident risk for each material is presented in Appendix G.

20.003: Safe secure trailer trucks are reserved for the exclusive transport of highly sensitive special nuclear materials, primarily for security reasons. LLW does not require intensive security oversight and therefore would be transported by certified commercial truck. Regardless of the vehicle, either safe secure trailer or commercial truck, the carrier of radioactive materials must comply with the same stringent Department of Transportation packaging and transport requirements, as explained in Section 4.4 of the HEU Final EIS. For normal traffic fatalities, no difference is assumed in the probability of risk per kilometer for either safe secure trailer or commercial shipments. However, for the probability of release of radioactivity in the case of accidents, it is lower for safe secure trailer shipments (due to special design of the safe secure trailer) than for commercial shipments.

20.010: Depending on the severity of the accident for the LLW material (with 0.9-percent enrichment), some of the Type A radioactive material packages could disengage from the truck and be breached, and some material could possibly be released. Any loose material could be recovered by conventional tools, repackaged, and transported away with minimal loss of life or property, and minimal permanent site contamination.

For the 4-percent LEU in UNH form, the material would be transported in Type A packaging, and the accident scenario would be similar to 0.9-percent LLW material. For the 4-percent LEU in  $UF_6$  form, the material would be transported in Type B packaging designed to prevent the release of contents under all credible transportation accident conditions. It is expected there would be no breach of the package and no loss of contents, even in severe accidents.

Both 0.9-percent LLW and 4-percent LEU are very low in radioactive properties. The health effects from transporting materials evaluated in the HEU EIS have been calculated and are presented in Appendix G of the HEU Final EIS.

**03.010:** Spent fuel is not a weapons-usable fissile material because its high radiation field makes reprocessing it to separate the Pu very difficult. Thus, there would be no fissile material that could be directly usable in weapons after use of LEU fuel derived from surplus HEU in commercial reactors.

**05.005:** The 8-year period in the HEU Draft EIS was based on the assumption that four blending sites would be used, and 46 years was based on the assumption that only one site would be used. In actuality, DOE will not be able to make material available for blending quickly enough to meet the 8-year schedule, and the HEU Final EIS is revised accordingly. DOE expects that a realistic estimate of the time needed to blend currently declared surplus HEU material for commercial use will be 15 to 20 years, and material that must be blended to waste is expected to take an additional 10 to 15 years.

**13.004:** There is no certainty that anyone will purchase the blended HEU, but 45 million pounds of uranium are purchased in the United States each year and 165 million pounds purchased world wide. It would appear that there is an adequate market for the blended Government uranium.

**06.015:** Because all of the action alternatives in the HEU Final EIS (Alternatives 2 through 5) fully satisfy the nonproliferation objective of the surplus HEU disposition program by making the material non-weapons-usable, extensive discussion of the differences among the alternatives for nonproliferation purposes is not called for. The economic and nonproliferation objectives of the program are consistent in that they both support commercial use.

**03.017:** The Department of Energy does not agree that commercial use of LEU fuel derived from surplus HEU increases the proliferation potential. DOE considers Alternatives 2 through 5, which represent blending different portions of the surplus HEU to waste or fuel, as roughly equivalent in terms of proliferation potential, and much more proliferation-resistant than the HEU in its present form. That is, LEU at both 4- and 0.9-percent enrichment and spent fuel are all considered to have low proliferation potential, because both enrichment of uranium and reprocessing of spent fuel to separate Pu are difficult and costly. Although fuel derived from U.S. surplus HEU and sold abroad could conceivably be reprocessed in some countries to separate Pu for commercial (non-military) use in mixed oxide fuel, that LEU fuel derived from surplus HEU would simply replace other fuel, so no incremental Pu will be created as a result of this program.

**06.017:** The Department of Energy agrees that setting an example for other nations is an important objective of the surplus HEU disposition program. Consequently, it is considered important to begin work on making our surplus HEU non-weapons-usable in a prompt manner.

**03.011:** The International Atomic Energy Agency probably would not track HEU beyond the point that it is blended down to LEU, at which time it is no longer a proliferation concern, and which will occur in the United States. Currently, 123 nations are members of the IAEA.

**06.019:** The inventory of surplus HEU has an average enrichment level of 50 percent, which means that, on average, 50 percent of it by weight is U-235. Almost all of the remainder is U-238, with small quantities of U-234 and U-236 in some of the material. Various portions of the inventory contain numerous other materials. Details concerning the forms, quantities, and locations of surplus HEU are shown in Figure 1.3-1. Some of the material is located at Rocky Flats.

**07.004:** As explained in Section 1.4.2 of the HEU Final EIS, DOE prefers the Maximum Commercial Use Alternative because it would best serve the purpose and need for the proposed action, which is to make the surplus HEU non-weapons-usable and, where

feasible, recover its economic value. It is self-evident that the economic recovery objective is best served by an alternative that seeks to maximize commercial use of the material, since the alternative of blending the material to waste recovers no value. DOE believes that the nonproliferation objective is also best served by the maximum commercial use alternative, primarily because it would permit the surplus HEU to be blended down more quickly than blending it to waste.

**05.013:** As described in Section 1.4.2 of the HEU Final EIS Preferred Alternative, DOE intends to sell as much as possible of the LEU fuel derived from surplus HEU or surplus HEU using a combination of four sites and two possible blending technologies. The goal is to achieve DOE's objectives in a way that would satisfy programmatic, economic, and environmental needs, beginning after the ROD and proceeding, as necessary, until all surplus material is blended down.

**10.003:** Comment noted.

**10.014:** Alternative 2, which considers blending the entire stockpile of surplus HEU to LEU for disposal as waste, was included in the analyses because it provides a comprehensive evaluation of a full range of alternatives in the HEU EIS as required by NEPA. Blending the material to waste would not recover any of the economic value of HEU for the Government or provide peaceful, beneficial use of the material; however, it would meet nonproliferation objectives. DOE's Preferred Alternative is to maximize commercial use of the material.

**14.006:** The HEU EIS does not need to explicitly analyze the disposal of spent fuel, since this program would create no incremental spent fuel to dispose of. As explained in Section 1.4.2 of the HEU EIS, spent fuel management and disposal is covered by the *Nuclear Waste Policy Act*, as amended. That program has its own NEPA process which must be fulfilled.

**14.011:** Spent fuel need not be dealt with in the HEU EIS because the HEU disposition program would generate no incremental spent fuel that would not be generated in the absence of the program.

**10.009:** Blending down the entire stockpile of surplus HEU to less than 1 percent and disposing of it as waste was evaluated in the HEU EIS as one of the alternatives. The analyses showed that this alternative would generate the highest environmental impact among other alternatives evaluated in the HEU EIS (Table 2.4-2). DOE has developed cost estimates associated with the alternatives analyzed in the HEU EIS and has made them available in a separate document with the HEU Final EIS. The cost analysis indicates that commercial use of LEU fuel derived from surplus HEU makes economic sense and would save billions of dollars compared to the alternative of blending HEU for disposal as waste. DOE believes that all of the action alternatives (2 through 5) evaluated in the HEU EIS meet the objective of nonproliferation and will send a positive message to other nations.

**04.006:** The Department of Energy's preliminary analysis has found no economic advantage of blending to 1 percent or less for waste disposal, since approximately five times as much blending would be required, and waste disposal costs are expected to be high. An analysis available separately from the EIS compares the costs of the alternatives and supports DOE's preliminary conclusion that commercial use of LEU fuel derived from surplus HEU makes the most economic sense and would save considerable money.

TENNESSEE (KNOXVILLE), AFTERNOON WORKSHOP  
PLENARY SESSION  
PAGE 1 OF 4

HEU EIS PUBLIC DRAFT COMMENTS AFTERNOON WORKSHOP Knoxville, Tennessee November 14, 1995	
SESSION: Plenary	
What was the motivation for the 50 metric tons of HEU to be transferred to USEC, and why wasn't it evaluated in the EIS?	01.003
The transfer of 50 metric tons seems to mix an economic and technical issue. The transfer of the 50 metric tons should be separate from this process. Is there an economic analysis in the EIS? How was the figure of 50 metric tons transferred to USBC derived? Why was the figure not 100 or 30 metric tons? The economics of this action should be fully considered in this process.	04.005
Why doesn't DOE blend down all of the HEU with the depleted uranium at Paducah (Kentucky), for example?	09.005
There appears to be a huge time discrepancy between the time frames for blending down to waste and blending down to fuel. How can the blending down process be expedited?	05.001
Aren't there other commercial facilities seeking licensing, other than the two listed in the EIS?	11.009
Why are Paducah (Kentucky) and Portsmouth (Ohio) not included as candidate sites if they have the capabilities to deal with the HEU?	09.002
The waste types and forms should be elaborated on in the document. Also, where will the waste types and forms be stored? Will mixed waste be generated during any of the proposed actions?	22.003
In reference to the alternatives aside during the plenary presentation, fuel should be referred to as spent fuel. Why is it important for DOE to say that it will not do anything until a site has been selected for the waste alternative, but will not do the same with regards to the fuel alternatives?	
Why doesn't this document consider the spent fuel that will be generated as a result of the commercialization alternatives that convert the HEU to fuel? Where will the resulting fuel and the waste be stored?	14.004
DOE should establish the same criteria for fuel alternatives as for waste alternative.	
Isn't there storage space at the Nevada Test Site for the material? What about storage at a tomb at Oak Ridge?	26.002
REVISIT: December 7, 1995 REVISED December 13, 1995	

**01.003:** Fifty t of HEU is proposed to be transferred to USEC to increase the corporation's assets and value. That would increase the proceeds to the Federal Treasury when the corporation is sold. That proposed transfer is evaluated as part of each of the commercial use alternatives in the HEU EIS (Alternatives 3 through 5).

**04.005:** The transfer of 50 t of surplus HEU to USEC might have been considered separately for purposes of NEPA, but DOE concluded that such separation might constitute unallowable segmentation of connected actions. The only difference between the 50 t of surplus HEU proposed to be transferred to USEC and the remainder of the surplus HEU is that the 50 t is the only concrete disposition proposal at this time. There is no difference in terms of potential environmental impacts, so it made the most sense to consider it in this EIS together with the rest of the surplus.

The HEU Final EIS does not contain a formal economic analysis, and one is not required by NEPA. However, cost estimates for the HEU EIS alternatives have been developed and are available in a separate document with the HEU Final EIS. The cost analysis supports DOE's preliminary conclusion that commercial use of LEU fuel derived from surplus HEU makes the most economic sense and would save considerable money. Economic considerations will clearly play an important part in ROD(s) stemming from this EIS. The 50 t figure was derived from DOE estimates of the quantity of material that could be made available for blending over a 5-year to 6-year period.

**09.005:** Depleted uranium at Paducah and other DOE sites could be used as blendstock for HEU. However, depleted uranium would generally not be used as blendstock for commercial material because it would not yield appropriate isotopic content in the product material. Since DOE has copious inventories of natural and low-enriched uranium that would make better blendstock, it is not likely that the HEU disposition program would make much use of the depleted UF<sub>6</sub> at Paducah or Portsmouth.

**05.001:** It takes about four times as long to blend a ton of HEU to 1 percent as to blend it to 4 percent, because the processing rates are limited by the quantity of material output. The process can be expedited by maximizing commercial use and using more than one blending site.

How do you know that the process of blending down the HEU would not cost more than to start making fuel from scratch if you have not done a cost analysis? What if you can't sell the blended down material? How much will it cost to blend down the material? How can the public get copies of the cost studies? The cost analysis should be included in the final EIS.

16.005

How much more strontium, cesium, arsenic, mercury, etc. will be added to our water supply at Watts Bar through the blend down process? How much more water contamination can we expect as a result of this action?

22.004

The United States has identified 200 metric tons of fuel (HEU) and 50 metric tons of fuel (HEU) from Russia that will be going to USEC. Is there a market for this fuel? Does DOE plan to send the waste from the blend down process back to Russia?

06.012

Where would the blended down fuel be stored?

26.004

Where is the material to be used for blending presently stored?

23.002

Do the facilities at the candidate sites have permits in place to blend down material?

Once the fuel was used commercially, would the spent fuel be stored at the commercial site and would that cause a proliferation risk? Can the United States assure that the fuel sold to foreign countries would be safe from associated proliferation risks?

15.001

The document only addresses the actions until the fuel becomes commercial. Under the NEPA process, the life of the material should be covered from cradle to grave.

30.004

What happened to the international treaty for returning foreign research reactor spent nuclear fuel to the United States?

<sup>1</sup>@rulpodjytenjprecectatiditipubliolnmetings concerning similar issues were combined

11.009: At this time, DOE is aware of no commercial facilities seeking licenses to process HEU other than the two analyzed in the HEU EIS.

09.002: The gaseous diffusion enrichment plants at Paducah and Portsmouth have the capability to deal with HEU only in the form of UF<sub>6</sub>. The K-25 Site on ORR is permanently closed. Since the surplus HEU is in the form of metal or oxide, not UF<sub>6</sub>, those facilities cannot be used for the blending activities.

22.003: Waste types, forms, and volumes generated by the three blending processes (UNH, metal, and UF<sub>6</sub>) are listed in Tables 2.2.2.1-2, 2.2.2.2-2, and 2.2.2.3-2 of the HEU EIS.

Conceptual treatment schemes for the blending alternatives as envisioned at the candidate sites, and storage and disposal impacts are described in the waste management sections of Chapter 4, Environmental Consequences.

Mixed waste is generated by all three of the blending processes, as indicated in the tables referenced above, but the mixed wastes are treated to LLW in the conceptual treatment schemes.

14.004: The Department of Energy does not intend to take actions to commence blending of HEU until there is a clear destination for the resultant material. In the case of waste material, that destination is a LLW repository. In the case of commercial material, the destination is the normal nuclear fuel cycle, which in the United States is a "once-through" cycle ending in disposal of spent fuel. The alternative of blending HEU to waste would generate LLW for disposal that would not otherwise exist. In contrast, the spent nuclear fuel that would result from commercial use of blended-down HEU would not represent any increment over that which would exist in the absence of this program.

The context of this comment pertains to the timing of disposition actions. DOE explained that waste HEU would not be blended until disposal capacity for the resultant LLW was available, because DOE does not want to build expanded storage facilities for the much higher volume of the blended-down material. The commentor expressed the opinion that HEU should likewise not be blended for commercial use until disposal capacity for the resultant spent fuel was available. The difference between the two is that, without this program, there would be no less spent fuel to dispose of (as fuel from natural uranium would be used instead), whereas LLW that would be created by blending HEU to waste would be in addition to that which would otherwise exist.

Comment Documents  
and Responses

**26.002:** Two DOE sites, NTS and ORR, are possible locations for disposal facilities for LLW derived from surplus HEU as identified in the Waste Management PEIS. The HEU EIS analyzes NTS as a representative site for such disposal for purposes of analyzing the transportation of waste materials. The Y-12 Plant is the primary facility for interim storage of surplus HEU, pending its disposition.

**16.005:** Cost estimates for the alternatives have been developed for inclusion in the ROD(s), and are available to the public separately from the Final HEU EIS. The cost analysis supports DOE's preliminary conclusion that the cost of commercial fuel alternatives would be less than making nuclear fuel by enriching natural uranium, as blending is relatively easy, whereas enrichment is difficult and expensive. Even if this were not so, and HEU-derived fuel cost more than natural uranium-derived fuel, it would almost certainly still be economic from DOE's perspective to bear that additional cost in order to avoid the much higher costs of blending the material to waste (involving 3 to 4 times as much blending) and waste disposal, which is now very costly. In other words, even if DOE had to give commercial material away free, it would almost certainly be more economical to do so than to bear the high costs of disposing of it all. The cost analysis also supports DOE's conclusion that commercial use of LEU fuel derived from surplus HEU would save billions of dollars compared to the alternative of blending HEU for disposal as waste.

**22.004:** As discussed in Chapter 2 of the HEU EIS and shown in the Tables 2.2.2.1-1 and 2.2.2.2-1, strontium, cesium, arsenic, and mercury would not be used during the blending down process, and consequently, would not affect the water supply at Watts Bar. As discussed in the Chapter 4 water resource sections, there would be no direct discharges of process wastewater to groundwater. Any hazardous liquids generated would be treated to limits specified in local, State, and Federal permits and would not be released until permit requirements are met. Consequently, the the alternative of blending process would not affect the water supply at Watts Bar.

**06.012:** The surplus HEU under consideration in this EIS is from the U.S. nuclear weapons program, not Russia; thus no waste would be sent to Russia. DOE anticipates no problems marketing the resulting nuclear fuel over a 15- to 20-year period.



26.004: Surplus HEU is currently located at 10 DOE sites (see Figure 1.3-1 of the Final HEU EIS) but most will be moved to the DOE's Y-12 Plant for interim storage. The blendstock material, which would be used in blending with surplus HEU to produce LEU, is located at various sites as natural uranium, depleted uranium, and LEU. These sites are ORR; SRS; Hanford; Paducah, KY; and Portsmouth and Fernald, OH. Once the surplus HEU material is blended to LEU, it will be shipped to fuel fabricators. DOE does not intend to blend down all surplus HEU and store as LEU. Surplus HEU will be kept in storage until there is a buyer that would utilize the material as fuel in commercial reactors within a reasonable timeframe.

23.002: All of the facilities at candidate sites have NRC permits in place to conduct down-blending of HEU.

15.001: Spent fuel is considered to present low proliferation potential during the 80 to 100 years that its radiation field is very high. Fuel fabricated from HEU-blended material that may be sold to foreign users would present absolutely no increment to proliferation risks, since it would simply supplant fuel derived from natural uranium.

30.004: Once the material becomes commercial fuel, it is fungible with and supplants other commercial fuel. Thus, the surplus HEU disposition program presents no incremental impacts after the material becomes commercial fuel, other than the positive impacts of avoided uranium mining, milling, and enrichment. The impacts of spent fuel management and disposal are covered under the *Nuclear Waste Policy Act*, as amended, including appropriate NEPA documentation.

TENNESSEE (KNOXVILLE), AFTERNOON WORKSHOP  
SUMMARY SESSION  
PAGE 1 OF 1

HEU EIS PUBLIC MEETING ORAL COMMENTS  
AFTERNOON WORKSHOP  
Knoxville, Tennessee  
November 14, 1995

SESSION: Summary

Who selects the trucking firm that will transport the material?

| 08.007

I support the nonproliferation policy for this material. I recommend, out of all the alternatives, to use the commercial facilities for blending. The United States should show responsible actions regarding the disposition of this material to the rest of the world. Work should be done at commercial vendors. The work described in the EIS is simple, not technically challenging. NFS is dedicated to worker safety and ensuring minimal environmental impacts as a matter of routine. NFS can do this work with no problems.

| 10.003

<sup>1</sup> Revised December 7, 1995.

<sup>1</sup> Oral comments received in public meetings concerning similar issues were combined (grouped) for presentation in this document.

08.007: All shipments of HEU would be by DOE-owned safe secure trailers (trucks specially designed for security and safeguards considerations). The selection of transportation contractors for blendstock or LEU shipments could be done by DOE, USEC, or other commercial entities that are involved in blending or purchasing the material.

10.003: Comment noted.

HEU EIS PUBLIC MEETING ORAL COMMENTS  
EVENING WORKSHOP  
Knoxville, Tennessee  
November 14, 1995

SESSION: Plenary

Why not blend all of the material to reactor fuel?	09.003
If this material is used in the United States reactor market will it then preclude international fuels from entering the United States market?	17.001
DOE has the support from Uniscol County, Tennessee for this process. We appreciate NFS. I can't think of anyone in our county that would not support this.	10.003
Is this an all or nothing situation? That is, having one site do it all or dividing it all between the four sites?	07.002
Do you anticipate a good market for this? There is a proposed facility in Claiborne, Louisiana that will process the material from start to finish. They have said they will be a direct competitor with the DOE and USEC.	04.002
Who will be marketing the material other than the 50 metric tons going to USEC?	17.004
Once USEC is privatized who will have title of the 50 metric tons of the material?	04.004
Is there full intent to market the material, no matter how low the costs, or would DOE hold on to it until the price is at a level you would want to sell it?	08.002
Ultimate storage - what is the anticipated storage time before selling?	05.002
Regarding the time frame, how many years is DOE expecting this process to take?	12.003
Do we expect that the Russians will be sending more fuel material over thus competing with the what the candidate sites would be processing?	05.003
With the Russians taking so long to process their fuel, will this impact the time frame for processing our 200 metric tons?	

<sup>1</sup>REVISED December 1995

<sup>1</sup>Oral comments received in public meetings concerning similar issues were combined (grouped) for presentation in this document.

09.003: The Department of Energy's Preferred Alternative is to blend as much as possible of the material for commercial use as reactor fuel. Some portion of the material (between 15 and 30 percent) is in forms that may ultimately prove uneconomical to develop for commercial use and will have to be blended down for disposal as LLW.

17.001: Commercial fuel derived from HEU is expected to enter a global uranium market. It is possible that it could supplant uranium imports or augment U.S. exports.

10.003: Comment noted.

07.002: The HEU EIS is programmatic in the sense that it will support programmatic decisions (for example, as proposed, to make commercial use of surplus HEU). The Preferred Alternative in the HEU Final EIS does not include any site preferences. The document concludes that the necessary blending activities could take place at any of the analyzed sites without significant adverse impacts. Thus, environmental considerations are not considered likely to drive site decisions, which may be made by parties other than DOE. If subsequent decisions concerning disposition of specific lots of HEU fall within the parameters analyzed in the HEU EIS in terms of sites, quantities, and processes, it is expected that no additional NEPA documentation will be required.

04.002: The Department of Energy does not expect to have any difficulty marketing the commercial material at market rates. Off-spec material will probably need to be marketed at discounted rates to compensate for the added processing and operational requirements for its use. The uranium market is now a global one, involving numerous competitors. DOE expects that LEU derived from surplus HEU will be introduced into the market at rates that do not have a material adverse impact on the market.

17.004: Under the current proposal, if this HEU EIS is finalized and an ROD is published consistent with the Preferred Alternative to maximize commercial use, the ROD may include a decision to transfer title to 50 t of HEU to USEC. This is planned to increase the value of USEC and thus the proceeds to the Federal Treasury from the sale of USEC. As explained in the HEU Final EIS, under current law, USEC must act as DOE's

marketing agent for the sale of all enriched uranium, including that derived from HEU. Proposed legislation to privatize USEC may modify or eliminate that restriction, in which case material could be marketed by DOE directly or by any number of other commercial entities acting as agents for DOE pursuant to competitive contracting arrangements.

04.004: It is expected that avoiding the costs of disposing of the material as waste will be a more important cost consideration to the Government than the potential proceeds from sales. However, market prices probably will play a role in DOE's sales decisions, since DOE will be required to avoid causing adverse material impacts to the domestic uranium industry.

08.002: It is expected that HEU would not be blended down until it can either be sold for commercial use or moved to a repository for disposal as waste. Thus, there would be very little storage needed for blended-down material. Some portions of the surplus stockpile may continue to be stored as HEU for up to 15 or 20 years prior to their disposition.

05.002: The Department of Energy estimates that the shortest time to blend 200 t of surplus HEU would be about 20 to 25 years, assuming all four blending sites were used. DOE expects that the commercial material in current surplus HEU will take between 15 and 20 years to blend, and material that must be blended to waste could take 10 to 15 years. DOE expects the demand for uranium fuel to remain essentially steady for the foreseeable future.

12.003: The United States has agreed to purchase LEU fuel derived from 500 t of highly enriched uranium from Russia to be delivered over a 20-year period. Eighteen tons equivalent to 14 million pounds of U<sub>3</sub>O<sub>8</sub> have already been delivered to USEC. Legislation passed by Congress and signed on April 26, 1996, (P.L.104-134) authorized transfer of this material from USEC to DOE to be sold starting in 2002 at a rate not to exceed 3 million lbs per year. In addition, this legislation limits the sale of subsequent uranium received from the agreement between the United States and Russia. No further purchase of Russian uranium is anticipated. See Section 4.8 of the HEU Final EIS.

05.003: The Department of Energy must ensure that its sales of uranium do not have a material adverse impact on the domestic uranium industry, taking into account the U.S.-Russian HEU agreement. It is possible that if the Russian agreement appears to be jeopardized by domestic HEU disposition actions, the administration might decide to defer domestic sales until market conditions improve.

TENNESSEE (KNOXVILLE), EVENING WORKSHOP  
DISCUSSION/SUMMARY SESSION  
PAGE 1 OF 2

HEU EIS PUBLIC MEETING ORAL COMMENTS  
EVENING WORKSHOP  
Knoxville, Tennessee  
November 14, 1995

SESSION: Discussion/Summary

OPEN DISCUSSION

Safety of Off-Specification HEU

Is a certain portion of HEU, the off-specification material, still going to be sold on the market? Would the off-specification material be dangerous to use in commercial reactors? Will the buyer will be made aware that the fuel is off-specification? Is there a safety issue with the off-specification material in storage?

17.002

Use of Depleted Uranium

Does this depleted uranium have contaminants?

33.003

General conversations have indicated that depleted uranium would be a good blend stock, is this true?

Is U<sub>234</sub> in HEU a problem?

06.025

Can the supply of natural uranium be used as blend stock? To what extent has DOE used the act of 1992 (Energy Policy Act) with respect to domestic mining of natural uranium for use in blending?

12.004

Are there mining companies that will be affected if natural uranium is not used?

With reference to page S-20, second column, first paragraph, first sentence of the EIS Summary, this should read "there would be little impact" on the nuclear fuel cycle not "no impact." This statement does not seem to be in relation to the global market and could be taken out of context. DOE needs to expand and analyze this issue more. Clarify the impacts of this HEU to the current market and mining activities.

12.005

DOE may need to consider adding more information or expanding the cumulative impact section.

17.003

Has DOE considered what would happen in the fuel market and in the uranium mining industry if the material is blended down to fuel?

12.006

REVISED December 7, 1995

17.002: The Department of Energy expects that some or most of the off-spec material will eventually be able to be sold for commercial use, subject to NRC license amendments for the users. Although the elevated U-234 content would present some radiation safety concerns for workers, particularly in fuel fabrication plants, comparable material is used in reactors overseas without any significant safety problems. DOE would fully disclose the composition of any material it sold.

33.003: The Department of Energy has large inventories of depleted uranium in many forms and with many levels of contamination. In general, depleted uranium would be suitable blendstock only for material that is to be blended to 0.9 percent for disposal as waste. However depleted uranium is less likely to be used as blendstock for commercial material, since it would not yield appropriate isotopic composition for commercial fuel. U-234 generates a substantial portion of the radioactivity in uranium, so elevated levels may necessitate special measures to protect workers during handling.

06.025: It is expected that natural uranium will be used as blendstock for blending some of the surplus HEU. New quantities of uranium may not need to be mined for this purpose since DOE has extensive supplies of natural uranium in its inventory.

12.004: The Department of Energy continuously assesses the impact of introducing uranium from its inventory into the U.S. uranium market. DOE is required by the terms of the *USEC Privatization Act* to avoid introducing uranium into the market in a manner that would have adverse material impacts on the domestic uranium industry. The impacts on the uranium and nuclear fuel cycle industries are detailed in Section 4.8 of the HEU Final EIS.

12.005: The cited "no impact" quotation refers to the case in which all surplus HEU would be blended to waste for disposal, in which case there would indeed be no impact on the nuclear fuel cycle. The HEU EIS correctly notes just below the cited passage that for the commercial use alternatives, "there would be some effects on the world and U.S. uranium fuel cycle industries."

17.003: Comment noted.

Does the 200 metric tons of HEU identified, also include the foreign HEU?	02.002
Regarding the ratios provided for commercial off specification material and waste, do they reflect the amounts that DOE has now or will have with the material identified in this document? What was the basis for the ratios?	07.005
Has the schedule of the Record of Decision slipped and why? If it has slipped, what does the schedule look like now?	29.003
How soon can the material be blended down once the Record of Decision is issued?	05.004
Regarding the transportation issue, does DOE expect any challenges from the sites?	20.004
<small>*Oral comments received in public meetings concerning similar issues were combined (grouped) for presentation in this document</small>	

12.006: The impacts on the uranium and nuclear fuel cycle industries are detailed in Section 4.8 of the HEU EIS, which has been enhanced in the final document.

02.002: The 200 t does not include any foreign HEU. It consists of about 175 t of domestic HEU presently declared surplus by the President plus an additional amount that may be declared surplus sometime in the future.

07.005: The estimates of the quantities of HEU that will be deemed commercial, off-spec, and non-commercial are based on DOE's current understanding of the material in the surplus inventory. That understanding is still developing. Since the HEU EIS analyzes a range of fuel/waste ratios from 0/100 to 85/15, the eventual outcome is in any event covered by the analysis.

29.003: The Record of Decision is scheduled to be published in the *Federal Register* in the summer of 1996.

05.004: The Department of Energy expects that a realistic estimate of the time needed to blend currently declared surplus material for commercial use will be 10 to 15 years. Material that must be blended to waste is expected to take an additional 10 to 15 years.

20.004: The Department of Energy does not anticipate any challenges regarding transportation of surplus HEU or LEU among the candidate sites used in the HEU EIS because these sites have been routinely transporting radioactive materials for many years.

TENNESSEE VALLEY AUTHORITY, CHATTANOOGA, TN  
PAGE 1 OF 1



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402-2601

November 29, 1995

Department of Energy  
Office of Fissile Materials Disposition  
c/o SAIC/HEU EIS  
P.O. Box 23786  
Washington, D.C. 20026-3786

COMMENT ON DISPOSITION OF SURPLUS HIGHLY ENRICHED URANIUM DRAFT  
ENVIRONMENTAL IMPACT STATEMENT

Many U.S. commercial reactors are using higher than 4 percent enrichment to refuel. Therefore, the alternative to blend the HEU and sell as commercial reactor fuel should not specify 4 percent as the target enrichment level. Rather, the alternative should say the HEU will be blended to less than 5 percent enrichment for sale as commercial fuel. All references to 4 percent LEU in the EIS should be changed to less than 5 percent LEU.

Sincerely,

*JT Robert*

James T. Robert  
Manager, Nuclear Fuel Projects

07.003

07.003: The HEU EIS explains in the text box, Highly Enriched Uranium—A Weapons-Usable Fissile Material, Section 1.1.1, that commercial reactors use uranium enriched to between 3 and 5 percent. Throughout the HEU EIS, references to 4-percent enrichment are intended to be surrogates for the range of commercial use enrichments. There is no intent to limit the blend-down enrichment level to precisely 4 percent. This point has been further clarified in the HEU Final EIS.

Disposition of Surplus Highly  
Enriched Uranium Final EIS



GARLAND "BUBBA" EVELY, Mayor

**Town of Erwin**  
P.O. Box 59  
Erwin, Tennessee 37650

November 22, 1995

The U.S. Department of Energy  
Office of Missile Materials Disposition  
P.O. Box 23786  
Washington, D.C. 20026-3786

Ladies/Gentlemen:

It has come to the attention of the Erwin Board of Mayor and Aldermen that NPS is one of four companies bidding for work involving the down-blending of high enriched uranium.

We are very familiar with NPS' record of safety and environmental compliance and we believe they could perform the down-blending work in a timely, safe and cost-effective manner.

The work would bring an estimated 100+ jobs to NPS here in Erwin, Tennessee. The multiplying economic impact on the local economy would be in the millions of dollars.

The community of Erwin fully supports the work which NPS has dubbed "evords into plowshares." The plan makes sense, not only for the people of Erwin, but for the U.S. Citizens at large... blending American stockpiled weapons into fuel for electricity.

We look at this as an opportunity to regain some of the jobs lost during the reductions in force that followed the end of the naval fuel work at the plant. NPS has been safely producing nuclear fuel and securely handling high enriched uranium for more than 35 years. Throughout that time it has been a fine corporate citizen, providing not only excellent jobs but also lending a hand to the community on numerous occasions.

I recently had the opportunity to tour the Erwin plant site and had the chance to view first hand the safety, security and environmental work that NPS performs. Please know that this project has the full support of the Erwin Board of Mayor and Aldermen.

Sincerely,  
*Garland Evelyn*  
Garland "Bubba" Evelyn  
Mayor

the

10.003

10.003: Comment noted.

ULMAN, ROBERT, ERWIN, TN  
PAGE 1 OF 1

Date Received: 11/08/95  
Comment ID: P0010  
Name: Robert Ulman  
Address: Erwin, Tennessee

Transcription:

Hello. My name is Robert Ulman, and I'm calling from Erwin, Tennessee. I would be very much in favor of NFS receiving the contract for the uranium blending. Our county is over 60 percent federal property owned by the government as national forest land, and we really make sacrifices because of that reason. I would like to see NFS get this contract so we can get more revenue into the county. Thank you.

10.003


10.003: Comment noted.

BOARD MEMBERS

Nancy Bogert  
Herbert Buchanan  
Nancy Gentry  
Glen Howard  
Lawrence L. Ligon  
Ralph Lovett  
W.A. Wilson

UNICOI COUNTY BOARD OF EDUCATION

DR. RONALD WILCOX, SUPERINTENDENT  
600 NORTH ELM AVENUE, ERWIN, TENNESSEE 37650  
(423) 743-1600



Working for Children

November 30, 1995

The U. S. Department of Energy  
Office of Fissile Materials Disposition  
P. O. Box 23786  
Washington, D. C. 20026-3786

Dear Sir/Madam:

I support the effort by Nuclear Fuels Services to obtain a contract to blend high grade and low grade uranium into a marketable fuel. Our county needs an economic boost. Nuclear Fuels Services is located in Unicoi County, which is heavily impacted by federal property ownership. The federal government owns 50% of the land in our county. This vast ownership limits the amount of property taxes that are collected in our school district. Due to a low tax base our educational programs and services suffer. We need a new high school in our county since the present one was built in 1929, yet we cannot afford one.

Children in our county need jobs upon graduation. We graduate approximately 200 students per year. Local industry employs approximately 20% of these graduates, with the remainder either not working or leaving our community to find a job.

If Nuclear Fuels is chosen for the project there are many benefits that will accrue for our county such as:

1. More dollars spent in our community due to more jobs created

2. Opportunities for our senior students to get a job locally upon graduation

3. The economy in Tennessee as a whole will improve providing a better life style for citizens

4. Nuclear waste will be reclaimed and made usable

5. Local property and sales tax dollars will increase

6. The project will be done in a safe manner. Their track record for safety speaks for itself

10.003

10.003: Comment noted.

UNICOI COUNTY BOARD OF EDUCATION, ERWIN, TN  
PAGE 2 OF 2

We are located in rural Appalachia and desperately need and want this project. Nuclear Fuels Services has helped our school system tremendously in past years. We consider them a "very good neighbor".

Respectfully,

*Ronald Wilcox*

Ronald Wilcox, Ed.D.  
Superintendent of Schools

RW/dh

10.003  
CONT.

**10.003: Comment noted.**



MAIL BOX 611077 • FORT LAUDERDALE, FL 33361 • 954-575-0000

November 22, 1993

The U. S. Department of Energy  
Office of Fissile Materials Disposition  
P. O. Box 23786  
Washington, D. C. 20025-3786

**Ladder/Comments:**

The Irwin/Unicom County Economic Development Board has been made aware that Nuclear Fuel Services, Inc., is one of four companies bidding for the project of demolishing high enriched uranium into fuel for energy. The Board fully endorses this project for NRS in Irwin, Tennessee.

The work would provide an estimated 100+ job opportunities here in Evin, and the multiplying economic impact on the local economy would be tremendous. Jobs lost during reduction of personnel following the end of naval fuel work at the plant could be reinstated. We are very supportive of existing industries in Evin and Unicoi County and appreciate the excellent jobs NTS provides our citizens.

As CEO/Administrator of the local hospital, I am familiar with HHS' safety record and environmental compliance. The hospital works closely with NPS, participating with them in disaster drills and training programs, as well as performing annual physicals for the employees.

The Tennessee Development Board believes the plan which RTS has dubbed

"swords into plowshares," takes shape not only for the people of Train and Valco County, but for S. Citizens at large -- blending American stockpiled weapons into fuel for electricity. We believe they could perform the demanding work in a timely, safe and cost-effective manner.

I recently had the opportunity to tour the Evin plant site and view first hand, the safety, security and environmental work that WFS performs. This project has my full support.

Sincerely,  
Jim

110. McHale

**Jim McMackin, Chief Executive Officer**  
**Vice Chairman, Erwin/Unicoi County Economic Development Board**

010000

cc: William H. Tambores Jr.

**Leads to a new way of thinking**

**10.003**

3-259



United States Department of the Interior

OFFICE OF THE SECRETARY  
OFFICE OF ENVIRONMENTAL POLICY AND COMPLIANCE

Richard B. Russell Federal Building  
75 Spring Street, S.W.  
Atlanta, Georgia 30303

January 25, 1996

ER 95/820

Mr. J. David Nulton  
Department of Energy  
Office of Fissile Materials  
Disposition  
c/o SAIC-HEU EIS  
P.O. Box 23786  
Washington, DC 20026-3786

Dear Mr. Nulton:

The Department of the Interior has completed its review of the Draft Environmental Statement for the Disposition of Surplus Highly Enriched Uranium (HEU) at Four Potential Sites located in Tennessee (2), South Carolina, and Virginia.

We are concerned about the risks involved in transportation of these materials to various sites as identified in the preferred alternative. The Final Environmental Statement should discuss the risks of doing all the blending at Oak Ridge, where the materials are now stored, as compared to the risks of additional transportation and processing at other plants.

It is estimated in the public health impact analysis that the maximum additional cancer fatalities from accident-free operations would occur at Oak Ridge as a result of blending related exposures. This analysis should include a discussion of nonfatal cancers. In addition, the risk of maximum additional cancer fatalities at Oak Ridge should be compared with the accident associated risks of transporting HEU to the sites identified in the preferred alternative.

We appreciate the opportunity to comment on this document.

Sincerely yours,

*James H. Lee*  
James H. Lee  
Regional Environmental Officer

20.013

21.011

20.013: Oak Ridge Reservation has the capability to blend surplus HEU as metal or as UNH. However, it is not considered as a candidate site for blending as UF<sub>6</sub> for which the material would have to be transported from ORR to another site. The results showed that transportation risks would be only slightly lower for blending to either metal or oxide LLW at ORR. For blending to fuel feed material as UNH crystals, ORR is not the lowest risk alternative. Two significant factors contributed to these conclusions: (1) onsite material handling represents the greater part of the total risk and such handling would still be necessary even to blend at ORR, and (2) the highest transportation risk for these scenarios is not in transporting HEU, but in transporting the significantly larger volume of fuel feed material and LLW after blending. The HEU Final EIS compares all of the blending options in Section 4.4 and Appendix G.

21.011: Public and occupational health assessments revealed that the maximum incremental cancer fatalities would not occur at ORR when all four sites were involved in blending. However, estimates showed that ORR would have higher incremental cancer fatalities when blending occurs at two DOE sites.

For a uniform irradiation of the body, the incidence of cancer varies among organs and tissues; the thyroid and skin demonstrate a greater sensitivity than other organs. However, such cancers also produce relatively low mortality rates because they are relatively amenable to medical treatment. Because of the readily available data for cancer mortality rates and the relative scarcity of prospective epidemiologic studies, somatic effects leading to cancer fatalities rather than cancer incidence (nonfatal) are presented in this EIS.

Transportation risk assessments showed that risks would be only slightly lower for blending to LLW at ORR. For blending to fuel feed material as UNH crystals, ORR is not the lowest risk alternative. Two significant factors contributed to these conclusions: (1) onsite material handling represents the greater part of the total risk and such handling would still be necessary even to blend at ORR, and (2) the highest transportation risk for these scenarios is not in transporting HEU, but in transporting the significantly larger volume of fuel feed material and LLW after blending.



United States  
Enrichment Corporation

United States  
Enrichment Corporation  
2 Democracy Center  
5803 Rockledge Drive  
Bethesda, MD 20817  
Tel. (301) 564-3200  
Fax. (301) 564-3201

January 11, 1996

Office of Fissile Materials Disposition (MD-4)  
ATTN: HEU EIS  
U. S. Department of Energy  
P. O. Box 23786  
1000 Independence Avenue S.W.  
Washington, D.C. 20585

Dear Sir/Madam:

USEC has reviewed the October 1995 *Disposition of Surplus Highly Enriched Uranium Draft Environmental Impact Statement*. We offer the following comments on the draft document.

Section 1.4 - USEC supports the preferred alternative to sell as much HEU as possible for use in commercial reactor fuel using a combination of sites and blending technologies that best serves programmatic, environmental, and economic needs

10.003

Section 2.1.2.3 - (i.e. the Limited Commercial Use Alternative) states that the 50 t of HEU will be split equally between two commercial facilities. This alternative should also cover the possibility of having all of the material go to only one facility. The other commercial use alternatives give ranges of the mix from "all commercial" to "all DOE". The Limited Commercial Use alternative should be analyzed in the same way.

09.024

Section 2.2 - On page 2-13 it states that "UNH, metal, and UF<sub>6</sub> are reactive and are not suitable for land disposal as waste", and that these forms would need to be converted to triuranic octaoxide prior to disposal. It is not clear in this section that the environmental impacts associated with this conversion step were analyzed. If these impacts were analyzed it should be clearly stated in this section, and if they were not analyzed, an analysis should be done and included in the appropriate section of the impact analyses.

33.007

Section 2.2.2.2 Metal Blending - states that metal blending would only be done if the HEU was to become waste. This section should be expanded to specify that metal blending may also be used to produce feedstock for USEC's Advanced Vapor Laser Isotope Separation program.

11.011

Offices in Paducah, Kentucky; Portsmouth, Ohio; Washington, DC

10.003: Comment noted.

09.024: The alternatives described in the HEU EIS were selected for analysis purpose only and are not intended to represent exclusive choices among which DOE (or USEC or other decisionmakers) must choose. These alternatives and site variations were defined to encompass the entire spectrum of potential fuel/waste ratios and combinations of sites that could result from the proposed action. Even though blending of all of 50 t of USEC material at a single commercial site was not included as a variation in the limited commercial use alternative, the impacts of that variation are evaluated in the substantial commercial use and maximum commercial use alternatives.

33.007: The environmental impacts associated with the oxidation step are analyzed in the HEU EIS and stated in Section 2.2.2.

11.011: Section 2.2.2.2 of the HEU Final EIS has been revised to include the fact that metal blending may also be used to produce feedstock for USEC's Advanced Vapor Laser Isotope Separation program.

33.009: During the enrichment process, as the ratio of U-235 increases the ratio of U-234 to U-235 increases, accordingly. Using depleted uranium in the blending process will reduce the ratio of U-235 to U-238 but will not change the ratio of U-234 to U-235. To meet the American Society of Testing Materials specification for commercial fuel feed, it is necessary to reduce the U-234 to U-235 ratio. To reduce the ratio of U-234 to U-235, it is necessary to add U-235 in the natural uranium or LEU enrichment state. Depleted uranium would be used as the blendstock for blending to waste because the ratio of U-234 to U-235 is not included in the waste acceptance criteria for waste disposal.

Depleted UF<sub>6</sub> would not be used for blending to waste because only commercial sites would use UF<sub>6</sub> as a blendstock for blending with the UF<sub>6</sub> process. Since depleted uranium cannot be used as blendstock for blending to fuel as described previously, depleted UF<sub>6</sub> would not be used for any of the processes for commercial fuel. Depleted UF<sub>6</sub> would also not be used as a blendstock for UNH or metal blending because it is in an incompatible form and would need to be converted to UNH crystals or metal ingots, and DOE has ample supplies of depleted uranium in metal and oxide form to use as blendstock for waste material.

Comment Documents  
and Responses

UNITED STATES ENRICHMENT CORPORATION, BETHESDA, MD  
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Page Two

Section 4.4 - On page 4-99 it states that "NU blendstock (in UF<sub>6</sub> form) would be provided by representative sources from the USEC Gaseous Diffusion Plant..". While NU could be obtained from USEC it would be more economical to use depleted UF<sub>6</sub>, since it would take less to dilute the HEU, and is abundantly available at a lower cost than NU.

33.009

Section 4.7 - Several important positive environmental impacts of blending HEU to LEU for nuclear power plants were omitted from this section. The first is the benefits of reducing the threat of terrorism or nuclear accidents from HEU. Although this benefit is not quantifiable, it certainly needs to be included as it is a major reason for the proposed action. Secondly, there are significant positive economic benefits to the federal budget from selling the fuel converted from HEU. Whether DOE directly sells the converted HEU, or USEC markets it (as is presently the law), the income from the sale of this material can either be applied to reduce the federal deficit or result in the need for lower revenues from taxes, tariffs, fees, etc. Another positive impact that should be included is that the use of government inventories of DU, NU, and LEU which currently have limited uses, if used as blendstock, would no longer require storage or disposal costs.

03.026

04.017

Section 4.8 - There appears to be a misinterpretation of the findings contained in USEC's *Environmental Assessment for the Purchase of Russian Low Enriched Uranium Derived from the Dismantlement of Nuclear Weapons in the Countries of the Former Soviet Union*. For the action of purchasing low enriched uranium from dismantled Russian nuclear warheads over a 20 year period, there will be no short term (before the year 2000) impacts on personnel levels at USEC's gaseous diffusion plants. After the year 2000, when shipments from Russia have increased to the equivalent of 30 metric tons of highly enriched uranium per year, the possibility exists that the total USEC production needs could be met by only one GDP. The impacts to unemployment from the closure of a GDP were analyzed in the *Environmental Assessment*. On page 4-185, it is inaccurate to say that there would be no loss of employment at the gaseous diffusion plants, as this is a possibility.

12.023

Section 4.9 - Several of the potential environmental impacts (bullet 2 and 4 on page 4-187) indicate that chromium contamination would occur. The gaseous diffusion plants (GDPs) no longer use chromium as a cooling water additive. Therefore, there should be no vegetation damage or contamination of the liquid discharge from chromium if the 7,000 tons of natural uranium is transferred to USEC and processed in the GDPs.

33.011

Also on page 4-187, "residual chlorine" should be "residual chlorine"

References Section - On page R-13, the reference "USEC 1994a" (i.e., *Environmental Assessment for the Purchase of Russian Low Enriched Uranium Derived from the Dismantlement of Nuclear Weapons in the Countries of the Former Soviet Union*, USEC/EA-94001) was inadvertently omitted.

January 11, 1996  
Page Three

Please contact me at (301) 564-3409 or Patrick Gorman at 564-3412, to discuss matters related to the comments above.

Sincerely,

*Patrick H. Gorman for*

T. Michael Taim  
Environmental Assurance and Policies Manager

cc:  
P. Gorman, USEC-HQ

03.026: The benefits of reducing the threat of terrorism or nuclear accidents from HEU due to this proposed action have been added to Section 4.7 of the HEU Final EIS.

04.017: Recently completed cost analyses for alternatives evaluated in the HEU EIS revealed that net income from the proposed action would be realized if the fuel/waste ratio remains between 65/35 (substantial commercial use) and 85/15 (maximum commercial use). DOE agrees that there would be positive economic benefits to the Federal budget from selling surplus HEU as commercial reactor fuel, and that the proposed action would reduce the necessity of storage, and associated costs, for Government inventories of depleted uranium, natural uranium, and LEU. This positive impact has been incorporated into Section 4.7 of the HEU Final EIS.

12.023: Section 4.8 of the HEU Final EIS has been revised to update information on the current status of the uranium mining and nuclear fuel cycle industries. Additional discussion of economic consequences of the Russian HEU was also added to the HEU Final EIS reflecting USEC's EA on the purchase of Russian LEU derived from the dismantlement of nuclear weapons in the countries of the former Soviet Union, and enactment of the *USEC Privatization Act*. In light of the act's restrictions on deliveries to commercial end users of material from Russian HEU, DOE concludes that the USEC EA's projections concerning the need for operation of the second enrichment plant are not likely to be valid.

33.011: Section 4.9 of the HEU Final EIS has been revised to reflect termination of chromium use as a cooling water additive at the gaseous diffusion plants. The editorial change has also been incorporated in Section 4.9 of the HEU Final EIS.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

FEB 7 1996

OFFICE OF  
ENFORCEMENT AND  
COMPLIANCE ASSURANCE

Mr. J. David Nelson  
Director  
Office of NEPA Compliance and Outreach  
Office of Fissile Materials Disposition  
c/o SAIC/HBU EIS  
P.O. Box 23786  
Washington, DC 20026-3786

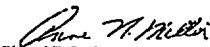
Dear Mr. Nelson:

The Environmental Protection Agency (EPA) has reviewed the Department of Energy's Disposition of Surplus Highly Enriched Uranium Draft Environmental Impact Statement. As a Cooperating Agency for the EIS, our review is provided pursuant to the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 *et seq.*) and Section 309 of the Clean Air Act.

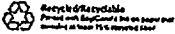
DOE proposes to dispose of U.S.-origin, weapons-usable, highly enriched uranium that is surplus to national defense or defense-related program needs. The draft EIS analyzes the environmental effects of a no action alternative and four other alternatives that represent different ratios of blending the highly enriched uranium to low enriched uranium using three different processes at four potential sites. The incremental radiation-related environmental impacts are modest and would not rule out any of the alternatives under consideration. EPA has rated the preferred alternative EC-2, environmental concerns - insufficient information. An explanation of EPA's ratings is provided in Enclosure 1. Detailed comments are provided for your consideration in Enclosure 2.

Thank you for the opportunity to comment. If you have any questions, please contact Susan Offord at (202) 260-5039.

Sincerely,

  
Richard E. Sanderson  
Director  
Office of Federal Activities

Enclosures



SUMMARY OF THE EPA RATING SYSTEM FOR DRAFT ENVIRONMENTAL IMPACT STATEMENTS: DEFINITIONS AND FOLLOW-UP ACTION		Enclosure 1
Environmental Impact of the Action		
1D--List of Objections		
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.		
1E--Environmental Concerns		
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Current measures may not be sufficient to avoid or to prefer the alternative. EPA intends to work with the lead agency to reduce these impacts.		
2D--Environmental Objections		
The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.		
2E--Environmentally Unsatisfactory		
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that the proposed action is not preferred. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CIO.		
Advisory of the Lead Statement		
Category 1--Adequate		
EPA believes the draft EIS adequately sets forth the environmental impacts of the proposed action, and that the basis of the alternative reasonably available in the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.		
Category 2--Insufficient Information		
The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternative that are within the spectrum of alternatives analyzed in the draft EIS. EPA could reduce the environmental impacts of the proposed action by the addition of additional information, data, analysis, or discussion should be included in the final EIS.		
Category 3--Inadequate		
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analysis, or discussion should be included in the final EIS. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and that should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CIO.		
* From EPA Manual 1600 Policy and Procedures for the Review of Federal Actions Impacting the Environment February, 1977		

Enclosure 2

EPA Detailed Comments on the Department of Energy's Disposition of Surplus Highly Enriched Uranium Draft Environmental Impact Statement

The draft environmental impact statement (EIS) is comprehensive regarding radiation related environmental impacts and the cumulative, site-specific impacts of a variety of waste management tasks the Department of Energy (DOE) might assign to a particular facility. Particularly useful is the discussion at the end of Chapter 4 concerning the relative impacts of "de-enriching" highly-enriched uranium (HEU) and enriching natural uranium (NU). This makes clear that radiation exposures from the "de-enriching" process are at least two orders of magnitude less than that associated with the enrichment process which would be displaced by DOE's disposal of the surplus HEU. It would be helpful if this analysis were extended to the production of radioactive wastes and perhaps to environmental impacts in general.

33.012

There are several additional points at which the draft EIS could be strengthened. The nature of the excess HEU to be disposed of is not clearly defined. This is significant because environmental effects, including radiation-related ones, are direct functions of the degree of blending that is necessary to "de-enrich" the material to a given level. This is the reason, for example, that blending to waste has greater environmental impacts than blending to fuel. Thus, the nature of the HEU to be disposed of is a central determinant of the total environmental effects. The rationale for the assumption that the material is on average 50% enriched is not clearly explained in the text. Indeed, given that the apparent reason for having surplus HEU is nuclear disarmament, one might assume that the level of enrichment of the material to be disposed of would be "bomb grade", or well above 90%. It is also not clear why any "assumption" is necessary - unlike problems associated with characterizing complex sites for cleanup, DOE should have a complete inventory of HEU in its possession. The EIS should provide a more complete discussion of the HEU to be disposed of and to the extent there is uncertainty concerning the composition of the material discuss and put bounds upon that uncertainty.

33.010

The EIS could also discuss explicitly the functional relationship between the degree of "de-enrichment" required and environmental and economic impacts. If there is a strongly nonlinear relationship, it may be that the environmental consequences of de-enriching say, one unit of 20% HEU and one unit of 90% HEU is much greater than de-enriching two units of 55% HEU, (the average of 20% and 90%). If so, one could not assess the overall effects of the campaign without knowing something about the actual distribution of enrichment levels in the surplus materials.

33.010  
cont.

It would be helpful if the EIS clarified early in the text that the molten metal blending process would only be used to create low-level waste and not low-enriched uranium (LEU). It is also unclear why blending using the uranium hexafluoride process is mentioned since none of the facilities have that capability.

07.015

33.012: A discussion is added in Section 4.7 of the HEU Final EIS to include avoided waste generation as a result of replacing current reactor fuel obtained from mined natural uranium with the LEU fuel derived from surplus HEU. A discussion is also added to compare potential emission rates of pollutants generated during the current fuel cycle and the surplus HEU blending process.

33.010: The nature of the surplus HEU was classified when the HEU Draft EIS was published and could not be included in the EIS. However, the amounts and forms of surplus HEU and their specific locations have been declassified recently and were made available in the Secretary of Energy's *Openness Initiative* announcement on February 6, 1996. This information is now included in Figure 1.3-1 of the HEU Final EIS. A declassified discussion of the rationale for using an average of 50 percent enrichment for the surplus HEU inventory in analyses was also added to Section 2.2.1 of the HEU Final EIS. As explained in this section, most of the surplus HEU is between 35-percent and 70-percent enrichment. Because the relative impacts of blending HEU to different enrichment levels are expected to be linear, and the variance from the 50-percent mean for the bulk of the surplus HEU is not great, it is reasonable to use 50 percent as the enrichment level for purposes of analyses in the HEU EIS.

07.015: Low-enriched uranium is a terminology used to characterize material that has a U-235 isotope enrichment of 19 percent or less. It is proposed in the HEU EIS that all surplus HEU will be blended down to LEU. Therefore, whether surplus HEU is commercial or not, the blending process will transform that material from a highly-enriched state (20-percent or greater enrichment) to a low-enriched state. Material that cannot be used in the fabrication of reactor fuel will be discarded as LLW. Hence, molten metal blending will be used to produce LEU, and this LEU would be discarded as waste. The fact that metal blending would only produce waste material has been added to Section 1.3 of the HEU Final EIS.

UF<sub>6</sub> is a technically viable blending process that could be used to blend surplus HEU inventory. Commercial reactor fuel fabricators prefer to receive LEU for commercial reactor fuel feed as UF<sub>6</sub>. Therefore, because this process could be implemented without major modifications to current blending facilities, the HEU EIS evaluates potential impacts of using the UF<sub>6</sub> blending process.

Comment Documents  
and Responses

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,  
WASHINGTON, DC  
PAGE 4 OF 4

Enclosure 2

The EIS would also benefit from some detailed and specific analysis of its preferred alternative. For example, the entire analysis is geared to the assumption that 10 tons of material per year are processed. The description of the preferred alternative suggests that 20 tons per year are processed. Does this double the short term environmental and economic consequences estimated for this alternative, or is the effect more or less than this? While the higher process rate used in the analysis may be reasonable, the reader would have a clearer sense of the tradeoff between the duration of the disposal campaign and various measures of impact. In general, the analysis should avoid assuming a generic value for a parameter which is explicitly varied in an alternative.

07.016

It is also unclear in the preferred alternative whether the 50 tons of HEU to be transferred to the United States Enrichment Corporation (USEC) will be processed and disposed of differently than the other 150 tons of HEU. For example, on page S-15, second paragraph, the 50 tons of HEU are mentioned separately from the remaining 120 tons that could be blended to LEU for commercial fuel at any of the four sites. However, in the following paragraph, it mentions that the two DOE facilities would each blend 85 tons of HEU to LEU for commercial fuel. This amounts to a total of 170 tons of HEU for commercial fuel, and from this amount it appears as though the two facilities will receive or share the 50 tons from the USEC.

07.014

Finally, it would be useful to have an explicit discussion in the text why "waste" must be blended to essentially background levels before disposal. In the absence of such a discussion (of criticality or other issues) it is not clear to the reader why waste could not be created by blending HEU down to some intermediate level of low-enriched uranium, say 10%. This would make such an alternative more attractive in terms of the measures of impact detailed in the text, though perhaps still unfavorable when the consequences of having to mine and process additional NU are considered.

33.002

**07.016:** The environmental impact analyses in Section 4.3 of the HEU EIS are based on an assumed processing rate of 10 t per year per site for commercial material. The combined, life-of-campaign analyses (in Sections 2.4 and 4.5 of the HEU Draft EIS) thus assumed that up to 40 t per year of commercial material could be processed in the site variation involving four sites. In the HEU Final EIS, DOE has revised these processing rates to reflect more realistic assumptions about the rate at which material can be made available for blending, commercial considerations, and the need to avoid adverse material impacts on the domestic uranium industry. The durations shown in Table 2.1.2-1 have been revised to reflect a total commercial processing rate of about 8 t per year. The total life-of-campaign impacts for each alternative and site variation in Section 2.4 of the HEU Final EIS are not changed by these revised rate assumptions, but they reflect lower annual impacts spread over a longer period of time.

**07.014:** There is no difference in processing between 50 t of surplus HEU proposed to be transferred to USEC and the remaining commercially usable material. As described in the Preferred Alternative section of the Summary, the proposal to transfer 50 t of HEU to USEC is a component of each of the commercial use alternatives (3, 4, and 5). In describing these alternatives, 50 t of surplus HEU is always mentioned separately because this is the only concrete proposal for disposition of a batch of HEU at this time and the transfer is specifically authorized by P.L. 104-134. Nevertheless, footnotes have been added in the Summary and Section 2.1.2.4 (footnote 5 in both sections) to clarify this matter.

**33.002:** The representative enrichment level of 0.9 percent (used for analytical purposes) was selected for material destined for waste disposal based on experience in both the United States and Europe where waste has been disposed of at slightly greater than 1-percent U-235. This enrichment level assures that an inadvertent criticality would not occur. It is possible that uranium at higher enrichment levels could be disposed of (the LLW facility at NTS has accepted 1.25-percent enriched uranium in the past), but the lower level was selected for purposes of conservatism in the HEU EIS analysis. Blending to an enrichment level less than 0.9 percent would substantially increase the amount of waste product and cost of blending (for example, blending to a natural uranium state of 0.7 percent would increase the waste volume by 40 percent) without any incremental criticality protection. The actual percentage of blend down will be determined by the waste acceptance criteria of the selected waste disposal site.



URANIUM PRODUCERS OF AMERICA  
241 East Palace Avenue, Post Office Box 545, Santa Fe, New Mexico 87504-0545  
Telephone (505) 952-4511; Fax (505) 952-1267

November 15, 1995

Mr. J. David Nulton, Director  
Office of NEPA Compliance and Outreach  
Office of Fissile Materials Disposition  
U.S. Department of Energy  
1000 Independence Avenue, S.W.  
Washington, D.C. 20585

Dear Mr. Nulton:

The purpose of this letter is to request a 120-day extension of the public comment period for the Draft Environmental Impact Statement for Disposition of Surplus Highly Enriched Uranium ("HEU EIS"). The issues raised in the HEU EIS are numerous and complex, and the Uranium Producers of America (UPA) believes it is essential that sufficient time be allowed by the Department for interested stakeholders to review and comment on these issues. As it was DOE's announced intention to publish a draft EIS in July of this year, thereby allowing ample time for stakeholder input to the process, we believe that to now allow only 45 days for comment is simply too short a period in which to develop and submit comprehensive comments on this vital national issue. Accordingly, for the reasons that we discuss in more detail below, we urge you to consider extending the comment period.

As the organization representing the domestic uranium producers, UPA is particularly concerned about the impact that the disposition alternatives will have on the domestic uranium market. As you know, the pending United States Enrichment Corporation (USEC) privatization legislation specifically requires DOE to evaluate the impact on the domestic uranium market of any disposition of excess materials from the U.S. stockpile. Our preliminary review of the HEU EIS suggests that no more than a cursory examination of this issue has been undertaken.

In this regard, we find the document seriously lacking in any analysis of the identified alternatives from the standpoint of how these alternatives would impact the domestic uranium industry, as well as how they would maximize proceeds to the Federal Treasury. Indeed, in this letter regard, other than the assertion that the "preferred alternative" would "allow for peaceful, beneficial reuse of the material as much as possible [and] maximize proceeds to the Federal Treasury", we have found no analysis in the document, nor in the cited references, as to how this would be

32.003

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32.003: The Department of Energy originally designated a comment period of 45 days running from October 26 to December 11, 1995. In response to requests from the public from several reviewers, the comment period was extended until January 12, 1996. DOE feels that the total comment period of 78 days provided an adequate period for review and comment based upon the length and content of the document.

12.002: The quantity and rate of processing of materials addressed in the HEU Draft EIS was established to evaluate the environmental impacts associated with the maximum amount and processing rate of HEU that might potentially be made commercially available for use in reactor fuel. The rate at which material would actually be introduced into the market by DOE would be significantly less because of DOE's ability to make the material available for blending and because of the limitations on commercialization specified in the *USEC Privatization Act* (P.L. 104-134). The processing rates in the HEU Final EIS (Section 2.1.2) are revised to reflect more realistic assumptions about the rates at which LEU fuel derived from surplus HEU might be made available for commercial sale. DOE estimates that no more than 8 t per year total would be blended for commercial use.

The rate at which LEU fuel derived from surplus HEU could be introduced into the commercial market would be determined over time by many factors, including the rate at which the material becomes available from the weapons program, physical infrastructure, legislative guidance, and future market conditions. DOE's physical ability to make surplus HEU available for blending is constrained because much of it is in forms that cannot be used without prior processing and there is limited availability of processing capacity (such as for weapons dismantlement). It is anticipated that delivery of the proposed 50 t of material to USEC over the next 6 years will largely exhaust DOE's delivery capabilities during that period. From the existing surplus, only an additional 40 t of material is likely to be blended and introduced into the market for commercial use over a period of 10 to 15 years. The *USEC Privatization Act* (P.L. 104-134) requires the Secretary of Energy to determine that sales of uranium will not have an adverse material impact on the domestic uranium industry. Based on these considerations, DOE does not believe that the rates of disposition of domestic surplus HEU will have any significant impact on the U.S.-Russian HEU agreement. DOE will take these and other factors into account in making its decisions concerning uranium sales.

16.001: The Department of Energy has developed cost estimates associated with the alternatives analyzed in the HEU EIS and they are available in a separate document with the HEU Final EIS. The alternative to "blend HEU to 19-percent enrichment LEU and store indefinitely" was considered by the original screening process and eliminated

Comment Documents  
and Responses

Office of Fissile Materials Disposition, MD-4  
United States Department of Energy  
1000 Independence Avenue, SW  
Washington, D.C. 20585

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Official Business  
Penalty for Private Use \$300

URANIUM PRODUCERS OF AMERICA, SANTA FE, NM  
PAGE 2 OF 3

Mr. J. David Nulton  
November 15, 1995  
Page 2

accomplished, what the costs of the various options would be, and, specifically, what the comparative costs of the "preferred alternative" and the "Blend to LEU (19-percent enrichment) and Store Indefinitely" alternatives are likely to be. In fact, we are troubled that, as noted on page 2-9 of the document, the latter option appears to have been deleted after the screening process was completed, with no explanation of DOE's reasons for deleting this alternative.

Beyond this, the document contains no discussion of the impact that the "preferred alternative" is likely to have on the U.S.-Russian HEU Agreement and, in particular, on the carefully structured compromise that is contained in the pending USEC privatization legislation.

For the foregoing reasons, we believe it is important that DOE extend the deadline for the submission of comments. Moreover, we would ask that DOE provide all of the supporting documents and analyses that provide the basis for the conclusions reached in the HEU EIS, including the economic analysis of all of the alternatives, as well as the basis for eliminating the Blend to LEU (19-percent enrichment) alternative after the screening process was completed. UPA would request a minimum of 60 days prior to the deadline for comments during which the DOE's supporting information and analyses can be reviewed. This would then enable UPA to undertake an independent analysis of the basis for DOE's conclusions, including the likely impact on the U.S. domestic uranium industry of the various alternatives discussed in the EIS.

Finally, we note that DOE intends to conduct two public workshops on the HEU EIS, one in Knoxville, Tennessee and one in Augusta, Georgia. While the location for these two workshops will ensure that DOE will obtain much valuable input from those who are knowledgeable about the technical issues associated with blending down surplus HEU, we do not believe that DOE will receive the same level of input from interested stakeholders concerned about the impact of this initiative on the domestic uranium mining and milling industries. For this reason, we would formally request that DOE schedule an additional public workshop on the EIS, either in Denver, Colorado or Casper, Wyoming.

Thank you for your consideration of this request.

Very truly yours,

  
Dale L. Alberts  
President

16.001  
cont.

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because it would not recover the economic value of the material or provide for peaceful, beneficial use; would necessitate the construction or expansion of storage facilities to accommodate the increase in volume of material; and would require additional processing for either commercial use or disposal. The related alternative to "blend HEU to 19-percent enrichment LEU and sell" was eliminated after the initial screening process, a decision that was formalized by the screening committee in a subsequent meeting for essentially the same reasons. DOE's explanation of its rejection of the "blend to 19 percent and store" option in Section 2.1.3 has been expanded in the HEU Final EIS.

11.002: The HEU Final EIS includes additional discussion (in Section 4.8) regarding the relationship of the preferred alternative on the U.S.-Russian HEU agreement. DOE expects that there will be no significant impact on the agreement because LEU fuel derived from currently declared surplus HEU from the U.S weapons program would be introduced into the market over a period of 10 to 15 years (beginning in 1998 or beyond) and represents a small increment over the Russian material. The HEU Final EIS acknowledges the need to avoid adverse material impacts on the uranium industry.

30.003: Technical documents supporting the HEU Draft EIS are available for review in 12 DOE reading rooms, published in the *Federal Register* (60 FR 54867) on October 26, 1995, announcing the availability of the HEU Draft EIS. DOE has developed cost estimates associated with the alternatives evaluated in the HEU EIS (which are available in a separate document and have been provided to this commentor and all others who have expressed an interest in this subject). The cost analysis supports DOE's preliminary conclusion that commercial use of LEU fuel derived from surplus HEU makes economic sense and would save billions of dollars compared to the alternative of blending HEU for disposal as waste.

The option of blending to 19 percent and storing the LEU indefinitely was eliminated by the original screening process for surplus HEU disposition alternatives because it would not recover the economic value of the material or provide for peaceful beneficial use; would necessitate the construction or expansion of storage facilities to accommodate the increase in volume of material; and would require additional processing for either commercial use or disposal.

Disposition of Surplus Highly  
Enriched Uranium Final EIS

With regard to extending the public comment period for the HEU Draft EIS, DOE extended the period to January 12, 1996. A notice to this effect appeared in the *Federal Register* (60 FR 58056) on November 24, 1995. In light of the extension granted, DOE feels adequate time existed for all interested parties to complete their review and submit comments.

**32.005:** The Department of Energy must work within the constraints imposed by available funding and resources. Because DOE is trying to reduce costs of complying with NEPA, and due to the geographical proximity of three of the four candidate sites identified in the HEU EIS, DOE determined that two public meetings (Knoxville, TN and Augusta, GA) would be appropriate for this program.

Because public involvement is critical to the success of the program and recognizing that some individuals might not have been able to attend any public meetings, DOE provided other methods for submitting comments throughout the comment period: toll-free fax and voice recording, electronic bulletin board, and U.S. mail. These methods can also be used to request additional information and to request to be placed on the Office of Fissile Materials Disposition's mailing list.



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URANIUM PRODUCERS OF AMERICA  
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January 10, 1996

Department of Energy  
Office of Fissile Materials Disposition  
c/o SAIC-HEU EIS  
P.O. Box 23786  
Washington, D.C. 20026-3786

Re: *Comments to Disposition of Surplus Highly Enriched Uranium  
Draft Environmental Impact Statement (DOE/EIS - 0240-D)*

Dear Sirs:

The Uranium Producers of America ("UPA") respectfully submit the following comments regarding the Disposition of Surplus Highly Enriched Uranium Draft Environmental Impact Statement (DOE/EIS - 0240-D) dated October, 1995. The UPA is a trade association representing thirteen member companies involved in the domestic uranium mining industry.

Section 4.8 at page 4-181 of the Draft EIS recognizes that the disposition of the uranium derived from the Department's HEU will impact the domestic uranium industry. The impact of this material is a fundamental policy question that has been appropriately addressed by Congress in the Energy Policy Act of 1992 and the Balanced Budget Act of 1995

The disposition of "surplus" highly enriched uranium is of great concern to the domestic uranium producing industry. This industry was created in response to a critical national security need fifty years ago as the United States required a dependable source of uranium to fuel the atomic weapons necessary to win the Cold War. After the end of World War II, uranium production in the United States was practically non-existent, making the nation dependent upon unreliable foreign supplies of this vital material. Responding to urgent military requirements, the Atomic Energy Commission established the Domestic Uranium Procurement Program to develop domestic supplies of uranium concentrate for the national defense. The material that has now been declared surplus is the result of the very successful Domestic Uranium Procurement Program. Today our nation's defense needs have been met. However, the need for a strong domestic producing industry still exists due to the need for a secure source of uranium to fuel twenty percent of our nation's electricity requirements.

The domestic industry has confronted numerous challenges. As the Department is aware, the uranium market has been depressed since the early 1980's. Initially, there were two major contributing factors to the decline of the domestic uranium industry. The first was the U.S. government uranium enrichment contracting policies creating an oversupply of uranium which was exacerbated by a cut back in construction of new nuclear power plants beginning in the 1970's and increasing foreign imports of uranium. Second, just when supply and demand were coming in balance in 1990 and the market

12.014

12.014: The timeframes presented in Table 2.1.2-1 of the HEU Draft EIS were rough estimates and should be considered a very conservative, worst-case scenario. They were based on the assumption that each of the sites can process material at the analyzed rates (up to 10 t per year) and that DOE could provide material for blending at up to 40 t per year in the case of using all four sites simultaneously. In actuality, DOE will not be able to provide material nearly that quickly, and the rates presented in the HEU Final EIS have been revised accordingly. DOE expects that a realistic estimate of the time needed to blend currently declared surplus material for commercial use will be 10 to 15 years. The HEU Final EIS identifies 103 t of material that is likely to be commercially usable in the next 10 to 15 years, but 63 t of it is either already transferred or proposed to be transferred to USEC, leaving only 40 t of additional near-term commercial material in the current surplus. DOE must abide by the requirement in the *USEC Privatization Act* that it avoid adverse material impacts on the domestic uranium industry in undertaking its uranium transactions.

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page 2

was improving came a challenge from overseas -- a flood of unfairly-traded imported uranium from the former Soviet Union.

In response to these challenges, domestic producers have rationalized production and restructured their operations. And while employment and production levels have fallen, uranium production remains a vital industry -- particularly in the Western United States -- and has stabilized and positioned itself for recovery.

Modern, low-cost, in-situ leaching technology has been developed in a smaller, but more competitive domestic producing industry that has also minimized environmental impacts. Today, U.S. mining operations are competitive with foreign producers. Four U.S. production centers rank in the top ten world-wide in productivity.<sup>1</sup> Other modern and efficient production facilities are poised to commence production if market stability can be attained.

In 1992 the Congress specifically recognized the need to maintain a domestic uranium industry by including Uranium Revitalization provisions in Title X of the Energy Policy Act.<sup>2</sup> The Energy Policy Act also dealt with the impact of the purchase of highly enriched uranium from the former Soviet Union. Section 1408(d) of the Act requires that DOE "shall seek to minimize the impact on domestic industries (including uranium mining) of the sale of low enriched uranium derived from highly enriched uranium."<sup>3</sup> Congress further recognized the February 18, 1993, Government-to-Government HEU Agreement between the United States and the Russian Federation for the purchase of low enriched uranium derived from 500 metric tons of highly enriched uranium removed from nuclear weapons would have a major impact on the domestic uranium industry, as this represents the equivalent of approximately 400 million pounds of natural uranium. Accordingly, Section 5212(b) of the Balanced Budget Reconciliation Act establishes a schedule for sales of natural uranium displaced by imports of Russian HEU products.

The USEC privatization legislation reflects a carefully crafted schedule for the sale of uranium products derived from dismantled Soviet and U.S. weapons. This schedule promotes the principles of arms reduction and nonproliferation, while ensuring that the commercial nuclear fuel market is not disrupted by an uncontrolled flood of government-inventory product.

<sup>1</sup> See Exhibit 1.

<sup>2</sup> Public Law 102-486 - October 24, 1992. Section 1012 of the Energy Policy Act established the National Strategic Uranium Reserve which consists of natural uranium and uranium equivalents contained in stockpiles or inventories held by the United States for defense purposes. The use of this stockpile or reserve is restricted for military purposes until 1998. Section 1013 of the Act provided that remaining DOE inventories could be sold to USEC, *at a fair market price*, "only if such sales will not have a substantial adverse impact on the domestic uranium mining industry." (Emphasis added). These provisions were enacted due to the recognition that the unfettered introduction of uranium from government stockpiles would damage commercial markets.

<sup>3</sup> The January 14, 1994 Implementation Agreement of the HEU Agreement between the United States and the Russian Federation incorporated the provisions of §1408(d) of the Energy Policy Act, by providing that the sales of uranium derived from Russian HEU should be accomplished in a manner that minimizes impact upon the U.S. uranium industry. See *also* Exhibit 2, Letter from Terry Lash, DOE Director, Office of Nuclear Energy, to Senator Craig Thomas.

12.014  
cont.

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The provisions of the Energy Policy Act and the USEC privatization legislation underscore the recognition by policymakers that the disposition of uranium derived from HEU must be handled responsibly.

1. THE DEPARTMENT'S DISPOSITION OF THE EXCESS MATERIALS FROM THE U.S. STOCKPILE MUST NOT HAVE A MATERIAL ADVERSE IMPACT ON THE DOMESTIC URANIUM MARKET.

The United States Enrichment Corporation ("USEC") privatization legislation specifically requires the Department to evaluate the impact on the domestic uranium market of any disposition of "surplus" materials from the government's stockpile. The HEU EIS is deficient in its examination of this issue. The preferred alternative contained in the EIS calls for blending 170 tons of HEU from commercial use in eight years -- through the end of 2003. Of this amount, 50 tons would be transferred without charge to USEC for blending and commercial sale.<sup>4</sup> The remaining 120 tons of HEU would be blended to commercial reactor fuel over three years, beginning in 1999. Assuming that blending ten tons of HEU to commercial low-enriched uranium ("LEU") displaces 3.5 million pounds of natural uranium production, the Department's preferred alternative would displace 59.5 million pounds of natural uranium. If sold over three years, the Department's material could displace approximately 20 million pounds of natural uranium production annually, or approximately forty percent (40%) of annual U.S. requirements.

In order to be consistent with the objectives of Section 5212(d) of the Balanced Budget Act, the principal focus of any disposition of the Department's surplus HEU should be on ensuring that any sales undertaken will not have an adverse material impact on the domestic uranium mining industry. To accomplish this the aggregate impact on the domestic uranium industry of the sales of Russian HEU, USEC material and the Department's material must be analyzed. The quantities and disposition of material set forth in the Draft HEU EIS would have a material adverse impact on the domestic uranium mining industry. Such adverse impact should be specifically recognized and avoided by the Department.

Section 4.8 of the Draft EIS recognizes that the Department's disposition of the material derived from the blended HEU will constitute a material adverse impact on the domestic uranium industry. At page 4-185 it is stated that blending 10t of HEU as UNH to 4 percent LEU per year could annually displace 3.5 million pounds of uranium production. According to the Draft EIS this would displace the current annual production of all domestic producers. While the UPA would dispute the Draft EIS's apportionment of some of this material to foreign purchasers, the 15 to 20 percent reduction in deliveries by domestic producers projected in the Draft EIS would be devastating to the industry.

Correspondence dated December 5, 1995 from the Department to the UPA (see Exhibit 3) indicates the quantity of materials addressed in the draft HEU EIS was established to evaluate the environmental impacts associated with the maximum amount of highly enriched uranium that might potentially be offered for sale. The letter states

<sup>4</sup> The disposition of this material into the commercial market place is subject to the schedule set forth in §5212(c) of the Balanced Budget Act.

12.014  
cont.

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page 4

"[t]he quantity of materials that would actually be introduced into the market by DOE would be significantly less."

The Department's letter suggests that "an estimated 40 metric tons of highly enriched uranium (12.6 million pounds of U<sub>3</sub>O<sub>8</sub> equivalent)" may become available for use during a 10-15 year period beginning in 1998.<sup>5</sup> This would amount to DOE introducing material equivalent to approximately 2% of annual U.S. uranium needs or 0.6% annual global needs.<sup>6</sup> These amounts over the 10 to 15 year disposition schedule noted would have substantially less of an impact on the domestic uranium industry. However, this disposition plan is not specified nor even discussed in the draft HEU EIS. The text of the HEU EIS, without additional explanation, would leave the reader with the clear impression that DOE plans to process HEU for "maximum commercial use" at "all four sites," with processing for commercial use to be completed in an estimated three years (by the year 2002). Under DOE's "preferred alternative," 170 metric tons of HEU would be processed for commercial use, and another 30 metric tons would be disposed of as waste.

A vital ingredient of an EIS required by NEPA is a discussion of steps that can be taken to mitigate adverse consequences resulting from government action. While Section 4.8 recognizes adverse consequences to the domestic uranium mining industry as a result of the material derived from HEU, the Draft EIS does not include mitigating steps the Department must take to avoid a material adverse impact on the domestic uranium producers. The disposition schedule set forth in the December 5, 1995 letter is a proper discussion of the mitigating steps missing from the Draft EIS. The UPA would strongly urge the Department to formalize the disposition schedule set forth in the December 5, 1995 letter in the Record of Decision on the HEU EIS, so that these assurances will become a part of the formal DOE decision-making record. Such assurances regarding the mitigation of the socioeconomic impacts on the domestic uranium producing industry would fulfill at least part of the Department's obligations set forth in the Energy Policy Act and Section 5212(d) of the Balanced Budget Act.

**2. INTRODUCTION OF URANIUM DERIVED FROM THE DEPARTMENTS HEU ACCORDING TO THE PREFERRED ALTERNATIVE WILL HAVE A DETRIMENTAL IMPACT ON THE U.S.-RUSSIAN HEU AGREEMENT.**

The Department of Energy has stated strong support for achievements in Russian nuclear weapons dismantlement and the furtherance of U.S. nuclear nonproliferation objectives while recognizing the need for a viable U.S. uranium industry.<sup>7</sup> In order to minimize the impact of Russian HEU on the domestic producers, Congress provided in Section 5212(b) of the Balanced Budget Act for the orderly and disciplined introduction into the commercial nuclear fuel market of this uranium. This legislation provides that material from Russian HEU shall enter the market pursuant to a schedule which reflects uncommitted future demand for the product. The scheduled entry of this material insures the success of the Russian HEU Agreement by preventing price-suppression. Such price-suppression would result if additional material derived from the Department's HEU is suddenly dumped into the commercial market place in quantities that could be available from the preferred alternative described in the EIS.

<sup>5</sup> See Exhibit 2.

12.014  
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03.023

03.023: The HEU Final EIS is revised to enhance the discussion of the cumulative impact of the U.S.-Russian HEU agreement on the uranium industry, as well as the potential impact of the domestic surplus HEU disposition program on the Russian agreement. DOE does not expect to be able to make HEU available for disposition actions at the high rates suggested by the HEU Draft EIS, and those rates have been revised to reflect more realistic assumptions in the HEU Final EIS. It is correct that excessive depression of the market price of uranium could adversely affect the viability of the U.S.-Russian HEU agreement. However, in light of the restrictions on the rate of commercialization of both Russian and U.S. HEU specified in the *USEC Privatization Act*, DOE does not believe the domestic surplus HEU disposition program will significantly affect market prices. A countervailing consideration to the market price impact is that Russia would be reluctant to expand its HEU disposition actions if the United States does not reciprocate with similar actions with respect to its domestic stockpiles of HEU. Under the Act, DOE must ensure that its surplus HEU disposition actions are undertaken in such a way as to avoid adverse material impacts on the industry, and on the nonproliferation objectives of the U.S.-Russian HEU agreement.

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The preferred alternative published in the Draft Environmental Impact Study states in part, the Department's preference "[t]o sell for use in commercial reactor fuel as much as possible of the Low Enriched Uranium derived from HEU or HEU for blend down to LEU (up to 170 tons HEU, including 50 tons HEU with 7000+ natural uranium that are proposed to be transferred to USEC over a 6-year period). . . that best serves that are proposed to be transferred to USEC over a 6-year period. . . that best serves programmatic, economic and environmental needs, beginning as soon as possible following the Record of Decision and continuing over an approximate 8-year period, with continued storage of the HEU until blend down . . . While the Department's "preferred alternative" may serve its "programmatic needs" it does not take into account the material adverse impact such an alternative would have on the ability of the Russian HEU Agreement to succeed.

The Draft EIS mentions the Russian HEU Agreement only in passing at page 4-182. The Draft EIS is deficient in this regard as an Administrative Agency should consider the impact of other impacts when the actions are so interdependent that it would be unwise to consider one action without the other. Any benefit of disposing of surplus domestic HEU pales to the national security and nuclear non-proliferation benefits to be achieved by the successful implementation of the U.S.-Russian HEU Agreement.

As previously noted in our first comment, uncommitted demand for uranium will not support the introduction of uranium derived from the Department's HEU in the near future. The market simply cannot absorb the Department's material without severely depressing market prices. Lower natural uranium prices will produce lower returns to the Russian Federation on material derived from its blended HEU. If the marketplace will not produce the revenues expected by Russia, the contract for LEU derived from dismantled Russian weapons will be terminated or the U.S. Government will be forced to make national security premium payments to sustain the Russian HEU agreement. Such payments would dwarf any gains expected by DOE under its "preferred alternative."

National security and non-proliferation goals mandate that the U.S. Russian HEU Agreement be preserved and successfully completed. DOE must take into consideration the detrimental effect the disposition of its material would have on the continued success of the U.S.-Russian Agreement. As noted in our first comment, this could be accomplished by stating in the Record of Decision specific limitations on the introduction of this material into the commercial marketplace. The amounts of material to be sold commercially should be tied to uncommitted demand taking into account the legislatively scheduled deliveries in order to assure the continued success of the Russian HEU Agreement.

3. THE DRAFT EIS IS DEFICIENT DUE TO THE LACK OF COST COMPARISON INFORMATION CONCERNING THE VARIOUS OPTIONS CONSIDERED BY THE DEPARTMENT.

The Draft EIS does not contain comparative cost information concerning the various options or alternatives considered by the Department. In order to make a reasoned decision balancing the risks to the environment against benefits to be derived from the Department's proposed action, the comparative cost of each alternative is required. NEPA's intent to require full disclosure of potential impacts to the decision-maker and the public cannot work without accurate and complete fact gathering and analysis.

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16.015

16.015: Cost estimates for the alternatives analyzed in the HEU EIS have been developed to provide the decisionmaker, DOE, comprehensive information upon which to make decisions. The cost analysis, which has been provided to this commentor and all others who have expressed an interest in this subject, is available in a separate document with the HEU Final EIS. It supports DOE's preliminary conclusion that commercial use of LEU fuel derived from surplus HEU would save billions of dollars compared to the alternative of blending HEU for disposal as waste.

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Cost information associated with the various alternatives proffered by the Department is necessary for complete fact gathering and analysis of this EIS. For example, the Draft EIS states at page 4-185 that under the no action alternative, DOE would continue to store the surplus HEU. This alternative would not have an adverse material impact on the domestic uranium industry, but may not accomplish the Department's stated programmatic objectives. However, it is impossible to make a reasoned decision concerning this alternative compared to the Department's preferred alternative without disclosure of the costs of storage and the cost of blending the HEU material to LEU for immediate sale into the nuclear fuels market. Without comparative costs analysis between the various Alternatives and the Preferred Alternative described in the Draft EIS, it is impossible to fully weigh the environmental risks and socioeconomic impacts of the Preferred Alternative against the risks and benefits that could be achieved by following other stated Alternatives.

The impacts raised by the Draft EIS in section 4.8 cannot be fully reviewed without cost analysis and a risk/benefit analysis regarding the various alternatives. This is particularly true when the preferred alternative as stated could have a material adverse impact on the industry described in this section of the Draft EIS.

4. THE DRAFT EIS IS DEFICIENT AS IT FAILS TO EXPLAIN THE REASON THE DEPARTMENT DELETED THE BLEND TO LEU (19-PERCENT ENRICHMENT) AND STORE INDEFINITELY.

The Draft EIS rejects at page 2-9, the Blend to LEU (19-percent enrichment) and Store Indefinitely alternative with insufficient explanation. While recognizing that such an alternative would have no impact on the commercial nuclear fuel market and retains the potential value of the blended material, no cost analysis accompanies this rejected alternative in order to support the Department's action. Without a cost comparison between storage costs and the additional cost to blend this material to a lower enrichment level it is impossible to make a reasoned analysis of the benefits of this alternative as compared to other options.

Mention is made in passing to environmental concerns associated with storage that would need to be accommodated under this alternative. However, none of these concerns are identified. The benefit of no impact on the commercial nuclear fuel market certainly may outweigh these unidentified environmental concerns.

The Draft EIS places a high value on the beneficial reuse of the material and in other rejected alternatives for the recovery of monetary value by the Government as goals of the Department. The public reviewing the Draft EIS is at a handicap in assessing the true benefit of these professed goals as the costs associated with such goals are not included to be compared with rejected alternatives. Further, as pointed out in Comments 1 and 2, there are overriding policy goals that severely restrict the disposition of this material into the commercial market.

The Department should consider the legislative mandate that the disposition of this material shall have no material adverse impact on the domestic uranium mining industry and the effect of such disposition on the U.S.-HEU Agreement in its stated alternatives. Given the national security and energy independence importance of these policy decisions, the Blend to LEU (19-percent enrichment) and Store Indefinitely alternative merit close review.

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07.006

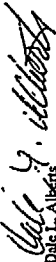
07.006: While it may appear that there is no impact of blending and storing at 19 percent, there are environmental concerns associated with potential storage of 19-percent material. These concerns are the construction of new storage facilities that would be necessary to accommodate the increased volume of the material and transportation of the material between the blending sites and the storage facilities. DOE's preliminary conclusions about the economics of the HEU disposition alternatives are based on first-order analysis: (1) if DOE blends material for sale, the resulting revenues would offset blending costs; (2) storage costs would be reduced; (3) if DOE blends material for disposal as waste, there will be no offsetting revenues, but only large outlays for disposal costs and much higher blending costs because much more blending is needed; and (4) blending for storage would likewise entail substantial outlays for new storage capacity, with no offsetting revenues. An analysis comparing the costs of HEU disposition alternatives has been prepared (and provided to this commentor and all others who expressed an interest in this subject) to aid the Secretary of Energy in reaching an ROD. The cost study, which is available separately from this EIS, supports the conclusion that commercial use of LEU derived from surplus HEU makes economic sense and would save billions of dollars compared to the alternative of blending HEU for disposal as waste. DOE will comply with the legislative mandates to avoid adverse material impacts on the domestic uranium industry when undertaking future uranium transactions.

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The UPA appreciates the opportunity to comment on the Draft EIS. We appreciate your consideration of the UPA's views on the disposition of surplus HEU as it is of vital interest to our industry. We strongly urge you to include the Record of Decision to include assurances that the Department has expressed in discussions regarding our concerns.

Very Truly Yours,

  
Dale L. Albens

enclosures

1. Enclosure (1) and 2. Enclosure (2)







Department of Energy  
Washington, DC 20585

The Honorable Craig Thomas  
U.S. House of Representatives  
Washington, D.C. 20515

Dear Congressman Thomas:

Thank you for your November 21, 1994, letter to Secretary of Energy regarding the Government-to-Government agreement between the United States and the Russian Federation for the purchase of 500 metric tons of low enriched uranium derived from highly enriched uranium (HEU) removed from nuclear weapons and its effect on the U.S. uranium industry. While the Department of Energy strongly supports recent achievements in Russian nuclear weapon dismantlement and the enrichment of U.S. nuclear nonproliferation objectives, we also share your concern for the viability of the U.S. uranium industry.

The implementation of this agreement, which was signed by the United States and the Russian Federation on January 16, 1994, should be completed in a manner that minimizes the impact upon the U.S. uranium industry. It is important to note that the United States Enrichment Corporation, a wholly-owned Government corporation established by the Energy Policy Act of 1992, is the exclusive agent on behalf of the United States for the implementation of the HEU agreement. It is our understanding that the United States Enrichment Corporation has not purchased any uranium under this agreement. Therefore, no material has been imported into the United States at this time.

In order to ensure that your concerns are properly addressed, I have forwarded a copy of your letter to Mr. William H. Tinker, Chief Executive Officer and President of the United States Enrichment Corporation. The Enrichment Corporation has sole responsibility for placing orders under the agreement with the Russian Federation.

The Department's position regarding the disposition of the material is that the HEU component of the purchase agreement should be utilized consistently with the provisions of the Uranium Antidumping Suspension Agreement and its amendments as requested by the U.S. Department of Commerce. This restriction limits the amount of HEU in uranium imported for end use in the United States through the year 2003. As a result of this provision the impact on the U.S. uranium industry would be minimal.

Sincerely,

  
Terry R. Lash, Director  
Office of Nuclear Energy

Exhibit 2



Department of Energy  
Washington, DC 20585

December 5, 1995

Mr. Dale L. Alberta  
President  
Uranium Producers of America  
141 East Palace Avenue  
P.O. Box 669  
Santa Fe, NM 87504-0669

Dear Mr. Alberta:

This is in response to your letter of November 15, 1995, concerning the Department of Energy's Draft Environmental Impact Statement for the Disposition of Surplus Highly Enriched Uranium (HEU EIS). I understand that Greg Rudy, Acting Director of the Office of Fissile Materials Disposition, spoke with you on Wednesday, November 22, 1995, about the issues raised in your letter. As Mr. Rudy pointed out, the quantity of materials addressed in the draft HEU EIS was established to evaluate the environmental impacts associated with the maximum amount of highly enriched uranium that might potentially be offered for sale. The quantity of materials that would actually be introduced into the market by DOE would be significantly less.

Of the approximately 175 metric tons of highly enriched uranium declared surplus to national security needs, plans call for approximately 63 metric tons to be transferred to the United States Enrichment Corporation; approximately 10 metric tons are under International Atomic Energy Agency safeguards in Oak Ridge, Tennessee and are reserved for other program needs; and approximately 62 metric tons of materials are comprised of forms and assays for which recovery and commercial use is considered unlikely. This results in an estimated 40 metric tons of highly enriched uranium (12.6 million pounds of  $U_3O_8$  equivalent) that may become available for commercial use during a 10 - 15 year period beginning in 1998. This would amount to DOE introducing material equivalent to approximately 2% of annual U.S. uranium needs or 0.6% of annual global needs. I hope this helps to alleviate your concerns regarding the potential adverse impact that the disposition of surplus highly enriched uranium might have on the U.S. uranium industry.

As part of the Secretary's openness initiative, the Department is planning to declassify additional information in the near future on the quantities and locations of materials declared surplus. Following this declassification, a more definitive analysis will be available.

Printed with soy ink on recycled paper

Exhibit 3

URANIUM PRODUCERS OF AMERICA, SANTA FE, NM  
PAGE 11 OF 12

Mr. Dale L. Alberts  
Page 2

With regard to extending the public comment period on the draft HEU EIS, the Department has already extended the period to January 12, 1998. A notice to this effect appeared in the Federal Register on November 24, 1995. In light of the extension already granted, and the information provided earlier by Mr. Rudy and reiterated above, I believe that adequate time exists for all interested parties to complete their review and submit comments, and that additional time or public meetings are not necessary. Your letter has been formally entered into our comment tracking data base. At the close of the comment period, an analysis will be prepared that addresses all questions and comments received during the comment period. This analysis will appear as part of the Final HEU EIS.

Lastly, DOE is developing cost estimates to support the alternatives evaluated in the HEU EIS. This information will be made available at the time the Final EIS is issued in April, 1998.

I understand that Howard Carter will be meeting with you on Thursday, December 7, 1996, in Washington, D.C. to discuss further the points raised in your letter. Please feel free to call me at (202) 698-4613 with any additional questions or comments that you may have.

Sincerely,

*David K. Nulton*

J. David Nulton  
Director, NEPA Compliance & Outreach  
Office of Fissile Materials Disposition

HEU SURPLUS OVERVIEW PROJECTION 11/95	
Total HEU Declared Surplus	~175 MT
Transfers to USEC	(93 MT)
125%: (13 mt UFG ~ 75% average assay) (1.7 million swt / 2400 MT U / 6.24 million lbs U308)	
Proposed: (50 mt metal/oxide ~ 40% average assay) (2.3 million swt / 4,800 MT U / 12.48 million lbs U308)	
Program (Non-weapon) Uses (Under IAEA safeguards at Oak Ridge) (1.6 million swt / 2,500 MT U / 5.65 million lbs U308)	(10 MT)
NET Potential DOE Disposition	102 MT
Recovery/Commercial Use Not Likely (aluminum, irradiated materials etc)	~(63 MT)
Balance Available Average Assay ~ 50% ~20 MT w/ high U235 Available over 10 - 15yr period--1998 & out years (3.1 million swt / 4,800 MT U / 12.48 million lbs U308)	~40 MT



U. S. ENERGY / CRESTED CORP.

877 North 8th West (307) 856-9271 Riverton, Wyoming 82501

VIA FAX: 1-800-820-5156

January 15, 1995

Department of Energy  
Office of Fissile Materials Disposition  
c/o SAIC/HEU  
P.O. Box 23786  
Washington, DC 20026-3786

Ladies and Gentlemen,

This letter is in response to your invitation to submit comments with respect to the Department's Draft Environmental Impact Statement for Disposition of Surplus Highly Enriched Uranium (HEU EIS). As a member of the Uranium Producers of America ("UPA") we have reviewed the UPA comments with respect to the HEU EIS. We both agree with and incorporate by reference the comments of the UPA with respect to the deficiencies in the Department's HEU EIS and the devastating effect that the Department's Preferred Alternative will have on the United States uranium producers as a whole. We also echo UPA's concern that the Department's Preferred Alternative will have a detrimental effect on the U.S. - Russian HEU Agreement.

The Department's suppression of prices in the United States from the indiscriminate release into the commercial market of low enriched uranium (LEU) derived from blending "surplus" U.S. highly enriched uranium ("HEU") would be reflected in the world market price for natural uranium concentrates (U<sub>3</sub>O<sub>8</sub>), as well as uranium hexafluoride (UF<sub>6</sub>). Not only would this reduce the revenues expected by Russia from its agreement with the U.S., risking the possible termination of the U.S. - Russian Agreement (with obvious national security implications), or the need for the U.S. to make national security premium payments to avoid such termination, as noted in the UPA letter of comments, but also the prospect of Russia or the United States Enrichment Corporation ("USEC") then dumping the LEU derived from Russian HEU on the world market would further depress the price for U<sub>3</sub>O<sub>8</sub> worldwide. This would most likely prompt protests by Canada and Australia, as well as dealing the final blow to the U.S. uranium producers, including U.S. Energy Corp.

Apart from these concerns and objections to the Department's HEU EIS, which have been addressed very capably in the UPA letter of comments, U.S. Energy Corp. has particular concerns about the effect the Department's proposed actions will have on the Company's plans

12.015

FAX (307) 857-3040

Plutonium/Corrosion/1990/Comments

12.015: The Department of Energy may not release uranium into the commercial market indiscriminately due to the provisions of the *USEC Privatization Act*. Most observers of the uranium fuel industry are projecting substantial increases in world uranium prices in the next several years as existing stockpiles are depleted. One producer has submitted comments to the effect that world uranium production is already only one-half of world demand. DOE anticipates that the combined impacts of Russian and U.S. HEU disposition actions will be to moderate those expected price increases. DOE is confident that its foreign policy (nonproliferation) objectives and the interests of the uranium industry can be accommodated. DOE intends to move cautiously, and must abide by the requirement in the *USEC Privatization Act* to avoid adverse material impacts on the domestic uranium industry in undertaking its uranium transactions.

Department of Energy  
January 15, 1996  
Page 2

to reopen its conventional uranium mining and milling operations in Wyoming and Utah, on which millions of dollars have already been spent. These additional concerns, which are not directly addressed in the UPA letter of comments, prompt us to submit this supplemental letter of comments.

12.015  
cont.

U.S. Energy Corp. is a Wyoming corporation with its headquarters in Riverton, Wyoming. It is a publicly traded corporation with shares of common stock traded on the NASDAQ/NMS quotation system. The Company currently has approximately 900 shareholders of record (and several times that number in street name) and employs approximately 90 full time employees and 15 part-time employees, principally in Wyoming. The Company is the originator of, and a 50% participant in, the Green Mountain Mining Venture ("GMMV") in Wyoming. The other 50% participant is Kennecott Uranium Company ("Kennecott"), a 100% subsidiary of Kennecott Corporation of Salt Lake City, Utah. (Kennecott Corporation is a wholly-owned subsidiary of The RTZ Corporation PLC, a United Kingdom public company.)

The GMMV owns a potentially world class uranium deposit (the Jackpot ore deposit) on Green Mountain in Fremont County Wyoming and the Sweetwater uranium processing facility in Sweetwater County, the only conventional uranium mill remaining in Wyoming. The mill was one of the latest built in the U.S. and has been maintained in excellent condition. It is rated at 3,000 tons per day (tpd) of ore, but has operated continuously for periods of time at 4,200 tpd. Initial production is projected at 3.7 million lbs.  $U_3O_8$ /yr., which can be increased to potentially as much as 6 million lbs.  $U_3O_8$ /yr., depending upon the grade of ore fed to the mill. The Jackpot deposit contains reserves of approximately 52 million pounds  $U_3O_8$ , with additional resources of up to 500 million pounds  $U_3O_8$  in the vicinity and under the control of GMMV. In addition to the uranium reserves and resources, GMMV has access roads, shop buildings, portals, containment structures, telephone, gas, electricity, and other infrastructure already in place. The cost to various companies to build these facilities has been over \$150 million and the standby cost of maintaining these facilities has been (and continues to be) approximately \$1,000,000 annually.

In Utah, U.S. Energy Corp. acquired Plateau Resources Limited, a Utah corporation ("Plateau"), from Consumers Power Company in 1993. Plateau owns the Shooting Canyon mill, an essentially new 750 tpd uranium processing facility in Garfield County in southeastern Utah. Plateau also has contract rights to the Tony M mine and Frank M uranium deposit approximately 3 miles from the mill. The Tony M mine is fully developed and permitted with 18 miles of underground haulage drifts, crosscuts, vent holes and an underground shop. It is ready to produce. All required infrastructure is in place. Plateau spent nearly \$120 million to build the mine-mill complex. In addition, Plateau also owns uranium properties in the Lisbon Valley area of Utah, the ore from which could be processed at the Shooting Canyon mill.

Plated/Corrpt/1996/Comments

U.S. ENERGY/CRESTED CORP., RIVERTON, WY  
PAGE 3 OF 5

Department of Energy  
January 15, 1996  
Page 3

Plateau's conventional uranium resources in Utah are estimated at about 17 million pounds  $U_3O_8$ . Plateau is also seeking to acquire additional reserves in the Arizona Strip and Colorado Plateau, areas with reasonably close proximity to the Shootaring Canyon mill. The standby cost for the Shootaring Canyon mill and support facilities has been (and continues to be) approximately \$650,000 annually to keep this facility available for U.S. production.

Finally, U.S. Energy Corp. owns 50% of Sheep Mountain Partners (SMP) with Cycle Resource Investment Corp., a wholly owned subsidiary of Nukem Inc. There are multiple uranium deposits that have been delineated so far on Sheep Mountain in Fremont County, Wyoming. Remaining higher-grade reserves at Sheep Mountain total about 4 million lbs.  $U_3O_8$ . Additional amounts of lower-grade resources also exist, with a total resource at Sheep Mountain estimated at approximately 13 million lbs.  $U_3O_8$ . Western Nuclear, the previous owner, spent in excess of \$125 million in developing these properties.

Underground development of the Sheep Mountain mines was first started by Western Nuclear, a subsidiary of Phelps Dodge Corporation, with the sinking of a 14-foot concrete-lined shaft (Sheep Mountain #1) that was completed in late 1975. A second shaft, Sheep Mountain #2, was completed in 1976. According to published reports, production by Western Nuclear averaged 300,000 tons of ore per year from 1978 to 1980, but in 1981 Western Nuclear suspended all uranium operations at Sheep Mountain. U.S. Energy acquired the properties from Western Nuclear in February 1988 and operated Sheep Mountain #1 until April 1989, toll milling the ore at the Shirley Basin mill of Pathfinder Corporation in Wyoming, to produce approximately 100,000 lbs.  $U_3O_8$ . Mining ceased because the market price of uranium concentrates dropped to a point that it was more economical to buy concentrates required to supply existing utility contracts, rather than produce them.

Today the Sheep Mountain #1 and #2 underground shafts are completed to 1,675 and 1,350 feet, respectively, both mines are permitted and have developed or partially developed mining levels with drifts that extend into the orebodies. Like the Tony M mine in Utah and the Big Eagle properties of GMMV (which is near the Jackpot deposit on Green Mountain), the Sheep Mountain properties have all required infrastructure in place and are ready to produce. Keeping the Sheep Mountain facilities in a workable condition to be ready to meet U.S. demand has cost (and continues to cost) about \$1,000,000 annually.

In summary, U.S. Energy Corp. is poised to resume uranium production in Wyoming and Utah. The market permitting, U.S. Energy Corp. has the capability of producing a total of 3 to 5 million pounds of  $U_3O_8$  annually via conventional methods before the end of 1998. Its processing facilities are licensed and on a standby basis. The Tony M mine in southeastern Utah is fully developed and permitted. The Jackpot deposit in Wyoming is about to receive its Permit to Mine within the next two months, after nine years in the environmental permitting

12.015  
cont.

Platow/Crested/1996/Comments

Department of Energy  
January 15, 1996  
Page 4

process. The Company is currently arranging financing to put these facilities back into production. When they are in full production, operation of the Jackpot mine, which has a projected life of 13 to 25 years, and Sweetwater mill will employ approximately 260 people in Wyoming. This does not include indirect employment in the surrounding area resulting from the operation of the mine and mill. These would be high paying jobs in an area where there is serious underemployment, which causes hardships not only to the affected families, but also to the State and federal government. Tax revenues to the State of Wyoming in the form of property, sales and ad valorem taxes are estimated to be approximately \$3.4 million annually when the mine and mill are in full operation.

In Utah, reactivation of the Shooting Canyon mill in Garfield County, and mining the nearby deposits in San Juan and Emery Counties, required to feed the mill, would employ approximately 250 persons in an area where employment opportunities are quite limited. Again, these would be high paying jobs and the number does not include employment gains in support businesses. Moreover, additional revenues to the State of Utah when the mines and mill are in full operation would be substantial.

All of this would be lost or at least delayed indefinitely if the price of uranium concentrates remain depressed as a result of the unrestrained disposition of LEU from "surplus" HEU, which has been accumulated by the Department or its predecessors over several decades. According to the Department's own analysis and publications, total U.S. uranium concentrate production in 1994 was only 3.4 million pounds. This compares to 43.7 million pounds in 1980 (*Uranium Industry Annual* 1984). Moreover, there was no uranium concentrate production from conventional mining and milling of uranium ore in 1994 and by the end of 1994 only six conventional mills were being maintained on a standby mode in the United States (*Uranium Industry Annual* 1994). This compares to 24 conventional uranium mills in the U.S. in 1981, of which 20 were operating throughout the year (*Uranium Industry Annual* 1984). Employment in the U.S. uranium industry in 1994 (excluding reclamation work) totaled 452 person-years (up 19% from 1993) compared to a peak of 21,951 person-years in 1979 (19,919 person-years in 1980). This disastrous decline in production and employment in the U.S. uranium industry is attributable principally to the depressed prices resulting from high inventories built up during the 1980's and the dumping of uranium concentrates from Russia and other CIS countries during the first half of the 1990's.

Now it appears that the Department, and indeed others in the Clinton administration, are bound and determined to continue to suppress prices and frustrate efforts, such as those by our Company, to revitalize the domestic uranium industry. Not only is this in violation of the express mandates of Title X of the Energy Policy Act of 1992, but it is contrary to any notion of sensible government policy. The impact on the U.S. balance of payments deficit will continue to worsen if the U.S. uranium industry is crippled further. The potential for the

12.015  
cont.

Plutonium Conversion/1996 Comments

Comment Documents  
and Responses



closure and dismantling of U.S. production facilities, which will cost hundreds of millions of dollars to replace, will continue and a complete collapse of the U.S. uranium market would be inevitable, causing our country to become solely reliant on foreign uranium to fuel the 110 nuclear reactors now operating in the United States.

12.015  
cont.

We agree with the UPA that a possible solution may lie in its suggestion that the Department formalize in its Record of Decision a more limited disposition schedule, as set forth in the Department's December 5, 1995 letter to the UPA. Alternatively, the Department should consider the alternative that was rejected without explanation in the HEU EIS to blend the HEU to LEU (19% enrichment) and to store such LEU indefinitely. This satisfies national security concerns regarding the reduction of HEU stockpiles, while preserving the potential value of the blended material without impacting the commercial nuclear fuel market. Moreover, the further blending and sale of this LEU when the market requires additional supply most likely would result in greater revenue to the government and confer greater benefit on U.S. utilities that consume nuclear fuel.

05.009

09.019

For the foregoing reasons, U.S. Energy Corp. respectfully request that the Department reconsider its Preferred Alternative or at least formalize in its Record of Decision an orderly disposition schedule for LEU derived from blending surplus HEU along the lines proposed in the Department's December 5, 1995 letter to the UPA.

Sincerely,

*J. C. H.*

John L. Larsen,  
Chairman, President and  
Chief Executive Officer

Π.Ι. Σπυρ

**Standard Contract 1010/Comments**

**05.009:** The Department of Energy has modified the discussion of the schedule for HEU disposition actions in Section 2.1.2 of the HEU Final EIS to make it more realistic. The more realistic schedule will also be reflected in subsequent ROD(s), as appropriate.

**09.019:** The HEU EIS explains the rejection of the blend to 19 percent and store option in Section 2.1.3. DOE does not consider the options of blending HEU for extended storage as reasonable as other alternatives because it would delay recovery of the economic value of the material and incur unnecessary costs and environmental impacts due to the need to build additional storage capacity to accommodate the increased volume of the material.

UTILITY RESOURCE ASSOCIATES

January 11, 1996  
URA Letter No. 361-04

Mr. J. David Nulton, Director  
Office of NEPA Compliance and Outreach  
Office of Fissile Materials Disposition  
United States Department of Energy  
1000 Independence Avenue S.W.  
Washington D.C. 20583

SENT VIA FACSIMILE

Subject: Comments on Disposition of Surplus Highly Enriched Uranium (HEU) Draft EIS

Dear Mr. Nulton:

Utility Resource Associates (URA), a Maryland corporation, endorses the DOE's proposed action to maximize the commercial use of surplus HEU. We agree that this action eliminates proliferation risks on a timely basis compared to other alternatives, reduces waste disposal costs and radiological exposures, and is expected to provide substantial revenue to the U.S. Treasury.

10.003

DOE characterized the surplus HEU as commercial, off-specification, and non-commercial. Although we do not know the batch quantities and isotopic content of the off-specification material, from a reactor core design basis we believe there is a domestic market for this material.

13.006

URA provides independent technical analysis, licensing support and economic analysis for approximately thirty reactors. Technical analysis includes fuel assembly nuclear, thermal and mechanical design, core reload pattern design and safety analysis. Our criticality analysis has been applied to reactor cores, spent fuel pools and dry cask storage. We understand the modeling issues involved in using off-specification enriched uranium and are available to use our PC-based Core Analysis Workstation or other methods to assist DOE in the technical and commercial analyses associated with using off-specification enriched uranium in a domestic light water reactor.

We appreciate the opportunity to comment on the draft EIS and are available to meet with DOE to further discuss issues regarding off-specification enriched uranium.

Sincerely,

*Kevin O'Sullivan*  
Kevin O'Sullivan  
Senior Associate

cc: Mr. Rod Grow (President, URA)

UTILITY RESOURCE ASSOCIATES CORPORATION  
31 Monroe Street • Suite 1600 • Rockville, Maryland 20850 • (301) 394-1940

10.003: Comment noted.

13.006: The Department of Energy expects that there will be a market for some or most of the off-spec material, although some of it may ultimately prove uneconomical to recover.

Comment Documents  
and Responses

VIRGINIA POWER, INNSBROOK TECHNICAL CENTER,  
GLEN ALLEN, VA  
PAGE 1 OF 2

January 5, 1996

U. S. Department of Energy  
Office of Fissile Materials Disposition  
c/o SAIC/HEU EIS  
P.O. Box 23786  
Washington, DC 20026-3786



COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR  
DISPOSITION OF SURPLUS HIGHLY ENRICHED URANIUM

This letter provides the comments of Virginia Electric and Power Company (Virginia Power) with respect to the DOE's Draft Environmental Impact Statement (EIS) for Disposition of Surplus Highly Enriched Uranium (HEU). Virginia Power has more than 1.8 million customers located in the Virginia and North Carolina region who receive approximately one third of their electrical energy from nuclear generation, and who will potentially be affected by the outcome of your actions. The scope of the HEU EIS is significant, and it appears to thoroughly address the many environmental and related technical issues associated with disposition of HEU. As an end user of the proposed blended down low enriched uranium (LEU), Virginia Power will, in general, direct its comments to the impact of the proposed government action on the uranium market and related nuclear fuel cycle industries.

Before presenting our specific comments, note that we believe that the blending down of HEU to LEU for commercial use is the correct action to take to reduce the threat of nuclear weapons proliferation in an environmentally safe and timely manner. The U.S. government's actions in this regard will set a nonproliferation example for other nations, while providing a beneficial use and recovery of the economic value contained in the material. In our opinion, it appears reasonable and beneficial to pursue your stated preferred alternative of maximizing the HEU blending and subsequent LEU use as commercial fuel over an approximate eight (8) year period.

With regard to the market impact of your proposed action, you specifically addressed the impact on uranium mining and nuclear fuel cycle industries. In general, we would agree with DOE that the relatively small amount of LEU produced annually through your proposed action, coupled with the long period over which it would be introduced into the market, should have minimal impact on the industry. Although the quantities are relatively small, we believe they are important to the domestic nuclear utilities in that many industry experts are predicting a significant shortfall in production versus demand in coming years. This shortfall is significant with the rapid reduction in excess commercial uranium inventories. The U.S. surplus HEU will help to offset this shortfall, and act to keep prices competitive for nuclear generation to the benefit of millions of energy consumers.

We understand that DOE has already received comments from the domestic uranium industry expressing concern with the depth of analysis performed in evaluating the uranium market impact. We believe your analysis is sufficient, especially when viewed in context with the 28% increase in uranium prices in 1995, and actual and planned increases in U.S. production already in place. To imply that the relatively small amount of material you propose to release will seriously impact the

12.019

12.019: The Department of Energy agrees that the domestic HEU disposition program alone is unlikely to have significant adverse impacts on the domestic uranium industry. However, in conjunction with the projected deliveries from Russian HEU disposition actions, the cumulative impacts are more significant, and the HEU Final EIS is therefore revised to reflect these cumulative impacts, as well as the implications of enactment of the *USEC Privatization Act*. DOE also agrees that predictability is important in avoiding adverse material impacts on the uranium industry from its HEU disposition actions.

domestic uranium producers seems, in our opinion, to be overstated.

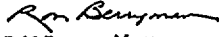
The majority of industry consultants predict a steady increase in uranium prices, driven in large part by current world production being only one half of world demand. Your proposed action to bring the surplus HEU slowly into the market over an extended period should act to provide the maximum benefit to the taxpayer as the government realizes a steady return on the material in a period of projected increasing prices. At the same time, the steady and predictable rate at which the material is introduced into the market will minimize its impact with respect to harming domestic producers.

Further, we believe your conclusions with respect to the domestic uranium conversion industry are overstated. Convertors have seen an increase of over 70% in the price of conversion services since the fall of 1992, and convertors worldwide are planning to add capacity. This does not sound like an industry that is "oversupplied" and "depressed" as you refer to it. In general, conversion capacity is projected to fall slightly below demand for the foreseeable future, and the conversion component contained in the surplus HEU will help to balance projected supply and demand.

In summary, we believe the proposed action, and your preferred alternative, is the right thing to do with respect to nonproliferation. At the same time it provides commercial benefit to U.S. utilities and by extension their customers, while minimizing the impact on the uranium mining industry and related fuel cycle industries.

If you have any questions, please contact Mr. H. H. Barker at (804) 273-3438, or me at (804) 273-2202.

Sincerely,

  
R. M. Berryman, Manager  
Nuclear Analysis and Fuel

12.019  
cont.

12.020

**12.020:** The Department of Energy has received conflicting comments from different segments of the industry with respect to the current and expected future condition of the uranium conversion industry. We believe the weight of the evidence supports a conclusion that uranium from HEU disposition actions will enter a conversion market that is tightening. The *USEC Privatization Act* requires DOE to avoid adverse material impacts on the uranium industry.

WALTON, BARBARA A., OAK RIDGE, TN  
PAGE 1 OF 2

85 Claymore Lane  
Oak Ridge, TN 37830  
January 11, 1996

To: US DOE, Office of Fissile Materials Division  
From: Barbara A. Walton (423) 482-6652  
Subject: Disposition of Surplus Highly Enriched Uranium (HEU) Draft Environmental Impact Statement (EIS), October 1995

My review of the subject document reveals several deficiencies:

There is no discussion of impact on the conversion plant, GE Wilmington, NC. 11.001

Tables E.2.3-1 and E.2.3-2 do not have units given. 21.007

The second column printed on page 3-17 belongs after the text printed on page 3-18. 22.011

There is no discussion of accidents in the summary. These are covered on p. 4-13 & 14 for the No Action Alternative, which includes serious chemical risk, and on p.4-31 thru 4-40, 4-55 thru 4-60, 4-68 thru 4-73 and 4-87 thru 4-90 for facility accidents. 21.008

Pages 4-162 and 4-163 need to be updated since ORR is NOT the selected site in the Tritium Supply and Recycling ROI and SRS is the selected site. 22.012

I also note a major flaw in the document which may lead to a faulty conclusion:

I take exception to the timeframes given in Table S-1 (Table 2.1.2-1, p. 2-6 & 2-7). The assumption of 10t/yr. HEU availability may be poor. In any case, there is no reason to delay use of the metal process for waste until after USEC fuel and "additional fuel". The table gives the impression that all 4 sites are needed to get the job done in a reasonable time. 05.007

The 50t of HEU to USHC is most interesting. This is discussed on p. 4-187 which states that "this material is in the form of uranium hexafluoride" at Portsmouth and Paducah plants being leased to USEC. The timeframe for this part of the HEU should, therefore, be independent of the rest of the material.

In addition:

The chemical risk for the uranium hexafluoride process is high in the case of an accident. I recommend that no more than one such commercial site be added to the national capability. 17.013

Any distinction between alternatives 4 and 5 depends on better characterization of the off-spec material. 07.012

Preference should be given to the DOE sites due to the current adverse impact of federal budget cuts. Relative costs for processing material already located at Y-12 should mean that most should be processed there.

Therefore, my preference is for a new option: Alternative 4/5 e) DOE sites, with emphasis on Y-12, and including the potential for commercial, if cost competitive, limited to no more than one new uranium hexafluoride facility. 10.008

11.001: The GE Wilmington Fuel Fabrication Plant is used in the HEU EIS as a representative site where conversion of natural UF<sub>6</sub> blendstock to U<sub>3</sub>O<sub>8</sub> for use in UNH blending might occur. This step is not likely to be necessary since DOE has plentiful supplies of natural uranium metal and oxide that can be used as blendstock for the UNH process. In the event that limited conversion of UF<sub>6</sub> blendstock is necessary, the impacts at the conversion facility would be negligible relative to the existing activities at the facility.

21.007: Table E.2.3-1 includes the unit "curies" in its title which is consistent with the style chosen for the HEU EIS. Table E.2.3-2 inadvertently omits curies from the title. This has been corrected in the HEU Final EIS.

22.011: The HEU Final EIS has been revised to correct this discrepancy.

21.008: Results of accident analyses were summarized in the Environmental Justice in Minority and Low-Income Populations section of the Summary in the HEU Final EIS. In addition, Tables S-2 and S-3 in the Summary present a comparison of the potential incremental impacts from accidents for all the alternatives evaluated in the HEU EIS.

22.012: The cumulative impact sections have been revised to eliminate ORR as a candidate site for the Tritium Supply and Recycling program.

05.007: The timeframes presented in the cited table have been substantially revised in the HEU Final EIS to reflect more realistic assumptions about commercial considerations, availability of material, and other factors (such as legislative restrictions concerning impacts on the uranium industry) in addition to processing rates. DOE expects that a realistic estimate of the time needed to blend material for commercial use will be 15 to 20 years. The cited discussion concerning UF<sub>6</sub> at Portsmouth on page 4-187 of the HEU Draft HEU pertains not to the 50 t of HEU that are proposed to be transferred to USEC, but rather to 7,000 t of natural uranium that are proposed to be transferred to USEC as part of the same transaction. The 50 t of HEU that is proposed to be transferred to USEC is in the form of metal and oxides, not UF<sub>6</sub>.

Disposition of Surplus Highly  
Enriched Uranium Final EIS

17.013: The HEU Final EIS reflects the potentially significant consequences associated with a postulated UF<sub>6</sub> release accident, as well as the low probability of such an accident. See, for example, Tables 4.3.2.6-4 and 4.3.2.6-5. Whether any UF<sub>6</sub> and related blending facilities are developed will be decided by commercial entities based on business considerations and subject to licensing and regulation by NRC.

07.012: The Department of Energy agrees that the ultimate determination of the proportion of surplus HEU that can eventually be sold for commercial use will depend on more detailed characterization of the surplus inventory.

10.008: The Y-12 Plant is one of the four alternative sites evaluated in the HEU EIS as having the capability to provide uranium blending processes. To be in compliance with NEPA, the HEU EIS must assess the environmental impacts of the proposed action and alternatives at all potential candidate sites without favoring one over another and provide this information to the decisionmakers.

06.008: Comment referred to the Office of Civilian Radioactive Waste Management.

Dear Mr. Stevenson  
Thank you for taking the time to forward my proposal and concept to the Nuclear Regulatory Commission for the Disposition, Storage, and Containment of Fissile Nuclear Materials and Spent Nuclear Fuel.  
The letter, that was written in a proposal to Congress April 27, 1995 was a first time proposal for a concept, on my part, in trying to solve the Nuclear Waste problems, that have plagued our nation for the last 40 years, at the cost of Billions of dollars.  
The reason for this letter is to update your original concept, for the Disposition, Storage, and Containment of Fissile Materials and Spent Nuclear Fuel, by utilizing a vitrification process in a low rail to glass log, that these would be fused in the 28 hollowed out core. The depth of the core is 59 inches by core diameter of 23 inch core (Mark) or (Granite) in long blocks of 30 to 40 tons. These same blocks would be cut 1 foot of the top, and then replace when the Nuclear Waste has been incorporated in the hollowed out core, as a added barrier against terrorism, or theft.  
These long 30 to 40 ton blocks of (Granite) or (Marble) would then be transported by rail or truck to remote Southwestern desert areas, on the Salt Flats of Utah, and stacked 5 or 6 high, that would provide a low cost, low maintenance, and long term containment method for Nuclear Waste, that then would be monitored by a satellite spy satellite, that would be placed in orbit 22,000 miles above the earth.  
Note: These same 30 to 40 ton (Granite) or (Marble) blocks could also be utilized for low level Nuclear waste in a flat top pyramid like structure at Rocky Flats, or any other Nuclear facility in the United States, that have no way to store these low level Nuclear waste.

06.008

... your letter to the Nuclear Regulatory Commission, has  
just been received by me, dated OCT 25, 1975 and was  
answered by Sue E. Goggin, Public Affairs Officer, dated  
in her letter to me that the Nuclear Regulatory Commission  
is at this time regulating agency, and generally does not  
fund or initiate projects to develop or improve systems.  
NRC does fund confirmatory research, which in the high  
level waste area includes research to provide the technical  
basis needed to independently evaluate specific proposals  
being developed by the DOE for packaging and permanent  
disposal of high-level waste as stated in the letter a  
copy of my letter has been forwarded to the Nuclear Waste  
Safety and Safeguards. My own proposal and concept has  
never been reviewed by any agency, however, I do know  
that the company, but a private citizen with a fixed  
income that has taken an interest in this nuclear waste  
problem at Rocky Flats and other nuclear facilities.  
If we are ever going to solve this nuclear waste problem,  
this government should take a single minded focus on  
independent geological underground burial and turn to some  
form of secure storage, but I have proposed my own concept  
that would allow both continuous monitoring and retrieval  
if it had to be. Deep geological burial does not entail waste  
management problems for future generations, but ironically  
that is not what it does precisely the reverse.  
Please review and give me your thoughts and  
comments on this proposal and concept.  
" Please Respond"  
Sincerely  
Kenneth F. Werth  
6895 Flower St  
Arvada Co. 80004  
303 7424-0790

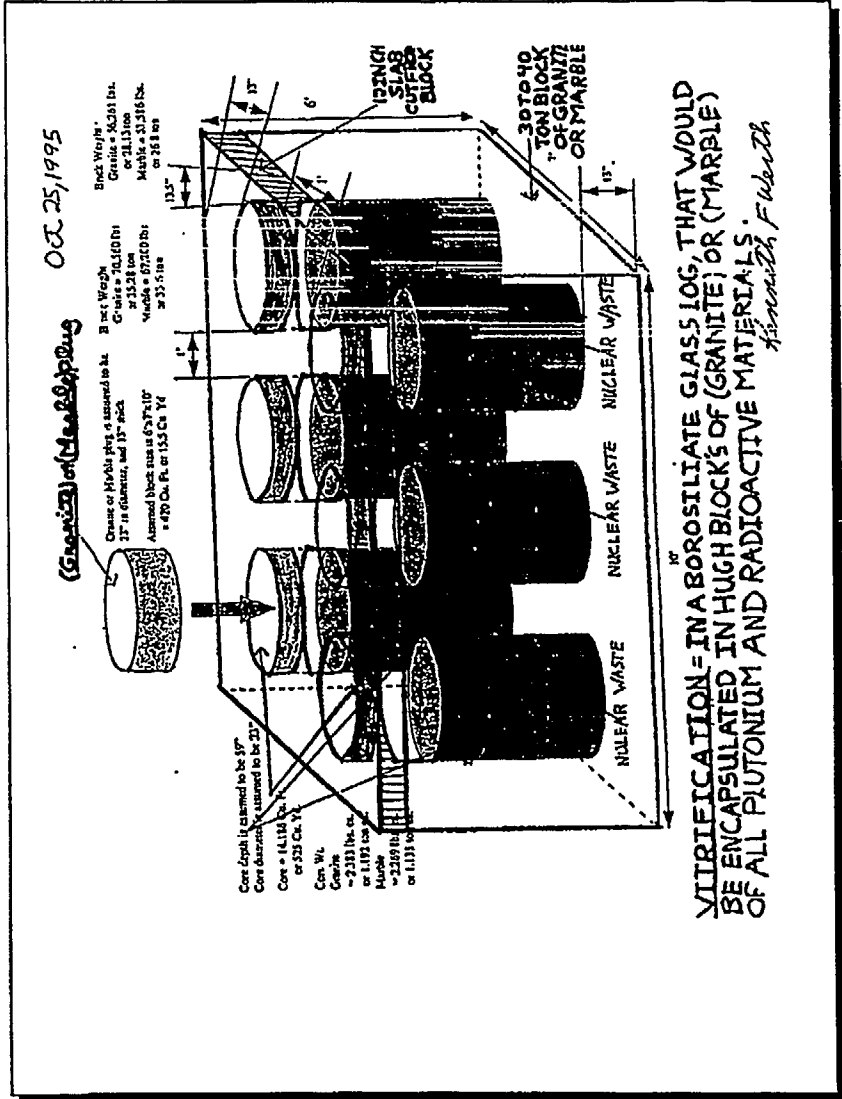


HEU-N. 0002 10.008 0000

This concept has been drawn up by me, and all questions and answers will have to come through me, for implementation.

Sincerely,  
Kenneth F. Weith

WERTH, KENNETH F., ARVADA, CO  
PAGE 5 OF 5



WESTERN NORTH CAROLINA  
PHYSICIANS FOR SOCIAL RESPONSIBILITY  
99 Eastmoor Drive  
Asheville, N.C. 28865-9211  
November 29, 1995

DOE-Office of Fissile Materials Disposition  
c/o SSAIC/HEU EIS  
P.O. Box 23786  
Washington, D.C. 20026-3786

Dear Sirs and/or Madams:

We have considered the various alternatives in the EIS regarding what the U.S. should do with all the surplus HEU from the bombs we are now taking apart. All the options utilizing blending which result in nuclear reactor fuel place in jeopardy the goals of the the proposed Non-proliferation Treaty. The reason for this is when down blended HEU is used as reactor fuel, the resulting spent fuel contains about 4% plutonium. The latter can be extracted without a great deal of difficulty. Therefore, every where in the world such fuel would be utilized, there would be a significant risk of diversion of this deadly byproduct into nuclear weapons. Promotion of the production of spent fuel is unwise. There is no safe, economical or practical means for disposing, storing or transporting it. Because of its available plutonium, it poses a continued weapons threat. Such a scheme is not in the best interests of the people of the United States.

We recommend that HEU be further blended down to a concentration of 1% or less, so it can be disposed of as low level radioactive waste. In the long range view of things this will be the most economical, environmentally sound and safest option. And it will best serve our nation's nonproliferation policy. Furthermore, even as we have required it of other nations, we should allow these actions to be carried out under international inspection. This will send a message to other nations that we are willing to openly demonstrate our intention to comply with the treaties for which we have been so recently negotiating.

Sincerely yours,

*John Cook, M.D.*  
*Thomas E. Patsy, M.D.*  
*Stephen P. Clark, M.D.*  
*James J. Smith, D.D.S.*  
*John J. Sweeney, M.D.*  
*William T. Fikert, M.D.*  
*Thomas M. Maguire, M.D.*  
*Marvin D. Brown, M.D.*

03.016

14.002

03.016

cont.

10.009

03.020

03.016: Typical spent fuel actually contains about 1-percent Pu. DOE does not agree that commercial use of LEU fuel derived from surplus HEU increases the proliferation potential, because no incremental spent fuel would be created as a consequence of this program. Spent fuel is considered to have low proliferation potential, because reprocessing of spent fuel to separate Pu is dangerous, difficult, and costly. Although fuel derived from U.S. surplus HEU and sold abroad could conceivably be reprocessed in some countries to separate Pu for commercial (non-military) use in mixed oxide fuel, that LEU fuel derived from surplus HEU would simply replace other fuel, so no incremental Pu would be created as a result of this program.

14.002: It is correct that the use in reactors of nuclear fuel derived from surplus HEU would result in the production of spent fuel. However, this fuel simply supplants nuclear fuel that would be produced from natural uranium anyway, so no additional spent fuel would be generated as a result of this program. Although spent fuel contains Pu, it is extremely hazardous to process and separate the Pu. It is a tenet of U.S. nonproliferation policy, consistent with recommendations of the National Academy of Sciences, that weapons-usable fissile materials be made at least as proliferation resistant as spent fuel.

10.009: Blending down the entire stockpile of surplus HEU to less than 1 percent and disposing of it as waste was evaluated in the HEU EIS as one of the alternatives. The analyses showed that this alternative would generate the highest environmental impact among other alternatives evaluated in the HEU EIS (Table 2.4-2). DOE has developed cost estimates associated with the alternatives analyzed in the HEU EIS and has made them available in a separate document with the HEU Final EIS. The cost analysis indicates that commercial use of LEU fuel derived from surplus HEU makes economic sense and would save billions of dollars. DOE believes that all of the action alternatives (2 through 5) evaluated in the HEU EIS meet the objective of nonproliferation and will send a positive message to other nations.

03.020: The United States has begun to subject its stockpiles of surplus weapons-usable fissile materials to IAEA controls. There is some HEU under IAEA safeguards at the Y-12 Plant, as well as some Pu at the Hanford and Rocky Flats sites. It is DOE's intent to make additional quantities of surplus material subject to international controls to the maximum extent possible.

Comment Documents  
and Responses

WILCOX, BOB, SAVANNAH RIVER, SC  
PAGE 1 OF 1

Date Received: 1/11/96  
Comment ID: P0034  
Name: Bob Wilcox  
Address: Savannah River, South Carolina

Transcription:

This is Bob Wilcox at the Savannah River Site. I have three comments. Number (1) all things considered, not just environmental impacts, DOE's preferred alternative is the correct one; (2) the calculated consequences of maximum facility accidents are significant, DOE should analyze whether some mitigation measures could be implemented so as to lower these risks independent of which site or sites are chosen for the blending; (3) so far as potential use of the 300M area at SRS is concerned, the DOE preferred alternative and mission guidance provided by DOE appear to be inconsistent. That's the end of my comments. Thank you.

10.003  
21.018  
23.006

10.003: Comment noted.

21.018: Accident consequences presented in the HEU Draft EIS were estimated using the GENII computer code. GENII is generally used and best suited for modeling impacts of radiological releases under normal operation of facilities because it handles a large number of radiological isotopes and accounts for the ingestion pathway. GENII was used with 50 percent meteorology (average meteorological conditions that would occur 50 percent of the time in any given period) during the accident. It is assumed that the noninvolved worker is placed in the sector that yields the maximum dose calculated by GENII. Latent cancer fatalities were calculated by applying this dose to all workers assuming that they are located 1,000 m away (or at the site boundary if less than 1,000 m) from the accident due to lack of data on site-specific worker distribution. This was done to compensate for a lack of data regarding onsite worker distribution, but yields highly conservative results. Also, this approach yielded disproportionately higher impacts at Y-12 and SRS because of the larger workforce at those sites compared to commercial sites.

In response to public comments, accidental releases of uranium were re-modeled using MACCS computer code with more detailed site-specific information to better estimate noninvolved worker cancer fatalities at each candidate site. MACCS is a widely used code and offers better capabilities than GENII in terms of modeling accident conditions. It uses actual (recorded onsite) meteorological conditions and distributes data recorded over a 1-year period. The worker distribution data for each site were also collected and incorporated into MACCS runs to obtain a more realistic estimate of potential worker accident consequences.

The results obtained from MACCS runs have been incorporated into Section 4.3 of the HEU Final EIS. The methodology for the accident analysis has been added as Section 4.1.9 and Appendix E.5 of the HEU Final EIS.

23.006: Building 321 is in the process of being deactivated and will not be available for metal blending as was stated in the HEU Draft EIS. Therefore, metal blending will not be performed at SRS.

**READER RESPONSE CARD**

The purpose of this card is to encourage communication between readers of the Newsletter and the Office of Fissile Materials Disposition. Your views, comments, and suggestions are appreciated.

☒ Mr. ☐ Ms. ☐ Dr. Robert H. Wilcox  
(first name) (last name)

Title: Project Manager

Organization: Westinghouse Savannah River Co.

Mailing Address: 711 Poncey Abbey Circle  
(street/post office box) (suite/apartment/unit/stop) (city) (state) (zip code)  
PO Box 208 (city) (state) (zip code)

Please check all that apply:

A. Mailing List Request: ☐ Add ☐ Modify ☐ Delete

B. Information Request:  
☐ Highly Enriched Uranium (HEU) EIS Implementation Plan  
☐ Long-Term Storage & Disposition of Weapons-Usable Fissile Materials FEIS Implementation Plan  
☒ Draft HEU EIS  
☐ Other (specify)

Comments: Why no alternative for blending 100 percent of surplus HEU?

Please mail response card to: U.S. Department of Energy • Office of Fissile Materials Disposition, MD-4 • Newsletter Editor • Forrestal Building • 1000 Independence Ave., S.W. • Washington, D.C. 20585

07.001: Alternative 2 represents blending 100 percent of surplus HEU to waste for disposal. Alternative 5 represents blending up to 85 percent of surplus HEU for commercial use as reactor fuel. Blending 100 percent for commercial use is not analyzed in the HEU Final EIS because 15 to 30 percent of the currently declared surplus inventory is in forms or assays that may prove uneconomical to develop for commercial use.

WOOD, ADELLE, NASHVILLE, TN  
PAGE 1 OF 1

5622 Kendall Drive  
Nashville, TN 37209  
January 8, 1996  
  
DOE/Fissile Materials Disposition  
c/o SAIC/HEU EIS  
P.O. Box 23788  
Washington, DC 20026-3788

Dear Sir or Madam,

I write to express my opposition to turning highly enriched uranium into nuclear reactor fuel. We already have much nuclear waste, with no safe and permanent means of disposing of it. At least until that problem is resolved, I and many others remain unalterably opposed to creating more toxic and radioactive waste.

10.024

While I am certainly no expert on this issue, I have grave concerns about the disposal of nuclear wastes, especially since I live in a state that has been proposed as a dumping ground. Transportation and storage of these wastes can not be made safe, and neither I or other citizens should suffer for short-sighted planning.

14.018

I do support the downblending of highly enriched uranium so that it can not be used in weapons, and developing the capacity to downblend all uranium declared surplus in ten years. The function of government is to protect its citizens, not to expose us to unnecessary risks.

10.023

Sincerely,

*Adelle Wood*

Adelle Wood

**10.024:** The spent fuel that would be created as a consequence of commercial use of LEU fuel (derived from surplus HEU) in reactors would replace spent fuel that would be created in any case from natural uranium-derived fuel. Hence, no incremental spent fuel would result from this program. Although spent fuel contains Pu, because of the high level of radioactivity of spent fuel, it is extremely difficult and costly to separate the Pu. Thus, in accordance with recommendations of the National Academy of Sciences, it is the policy of the United States to make weapons-usable fissile materials at least as proliferation resistant as spent fuel from commercial nuclear reactors.

**14.018:** Spent nuclear fuel that results from commercial use of LEU fuel derived from surplus HEU will not be in addition to spent fuel that would be generated in the absence of the surplus HEU disposition program. It will be managed and eventually disposed of together with other domestic commercial spent nuclear fuel pursuant to the *Nuclear Waste Policy Act*. The shippers and carriers of radioactive materials must comply with stringent Department of Transportation packaging and transport requirements, as explained in Section 4.4 of the HEU Final EIS. There have been no injuries or fatalities from a radioactive release in DOE's 40-year history of transporting of these materials.

**10.023:** Existing facilities analyzed in the HEU EIS have sufficient capability to blend down all surplus HEU to LEU in a reasonable timeframe. However, DOE does not anticipate being able to make much more than about 8 t per year available for blending. Therefore, DOE considers that it will likely take 15 to 20 years to blend the entire surplus HEU inventory.

Dept. of Energy  
Ms Hazel O'Leary  
PO B 23786 DC 20026

Gentlemen:

Urgently request that you  
blend down to less than 1% spent  
nuclear fuel and then get rid of it  
as low level waste.

This would be cheaper, environmentally  
less damaging, and safer (and should  
be inspected as other nations' waste  
is by international inspectors).

Don't delay — blend and dispose  
within ten years. And let's not have  
any more.

Sincerely,

Faith Young  
1004 Dixon Springs Hwy  
Dixon Springs TN  
37057-4071

Nov. 1995

10.009: Blending down the entire stockpile of surplus HEU to less than 1 percent and disposing of it as waste was evaluated in the HEU EIS as one of the alternatives. The analyses showed that this alternative would generate the highest environmental impact among other alternatives evaluated in the HEU EIS (Table 2.4-2). DOE has developed cost estimates associated with the alternatives analyzed in the HEU EIS and has made them available in a separate document with the HEU Final EIS. The cost analysis indicates that commercial use of LEU derived from surplus HEU makes economic sense and would save billions of dollars compared to the alternative of blending HEU for disposal as waste. DOE believes that all of the action alternatives (2 through 5) evaluated in the HEU EIS meet the objective of nonproliferation and will send a positive message to other nations.

10.009



ZARS, PETER, ERWIN, TN  
PAGE 1 OF 3

P.H.(PETS) ZARS  
887 LOVE STREET  
ERWIN, TN 37650  
ph&fax 423-743-2151  
e-mail: phz@aol.com

22 JAN. '96

DOE--OFFICE OF FISSILE  
MATERIALS DISPOSITION  
C/O SAIC/HEU EIS  
P.O.BOX 23786  
WASHINGTON, DC 20026-3786

SUBJECT: COMMENTS ON THE DISPOSITION OF SURPLUS HIGHLY  
ENRICHED URANIUM, DRAFT ENVIRONMENTAL  
IMPACT STATEMENT, REPORT OF OCTOBER, 1995.

TO WHOM IT MAY CONCERN:

We received a copy of the subject report late December and early January, the latter some days after the last extension had expired and after we had been immobilized by the previous week's snowstorm. Although we are supposedly on the NRC's list of concerned private citizens, no material was given to us by that route. Our comments are therefore brief and force us to request a public hearing to better address the grave issues before deciding between final alternatives.

Comments

1) Under Alternative 1, "no action but continued storage", we feel this option is to be preferred over all others for the following valid reasons:

- a) All other proposed actions do not address the immediate problem of present proliferation possibilities. It is possible today for a private citizen to purchase an atom bomb from several known or unknown foreign suppliers.

32.016

10.021

32.016: The availability of the HEU Draft EIS was announced in the *Federal Register* (60 FR 54867) on October 26, 1995. In addition, notice was mailed directly to approximately 3,000 individuals on the mailing list of the Office of Fissile Materials Disposition, and notice of the dates and locations of public workshops on the HEU Draft EIS was published in Erwin-area newspapers at about the same time as the *Federal Register* notice appeared. Notice of the HEU Draft EIS was not provided through the NRC's notice system because the EIS is not an NRC document and does not involve any pending NRC licensing or enforcement actions. The comment period was extended from 45 to 78 days and ended on January 12, 1996. Unfortunately, there is no way for DOE to assure that every interested individual is notified, but we do the best we can. Although your comments were received after the end of the official comment period, they have been fully considered. To reduce costs of complying with the NEPA of 1969, as amended, and due to the geographical proximity of three of the four candidate sites identified in the HEU Draft EIS, DOE determined that two public meetings (Knoxville, TN and Augusta, GA) would be appropriate for this program.

10.021: a) The No Action Alternative is analyzed and will be considered with other alternatives in the ROD. However, it does not satisfy the nonproliferation and economic objective of this program because it leaves the material in weapons-usable form. If it is true that private citizens can purchase atom bombs, it would seem that converting HEU to LEU would improve that situation and set an example for other nations.

b) The U.S. HEU disposition program is not a bilateral action with the nations of the former Soviet Union, but it is intended to reciprocate similar actions Russia has already taken unilaterally to reduce its HEU stockpiles and set an example for others.

c) DOE makes no assumption about abatement of proliferation threats beyond the obvious one that reducing global stockpiles of surplus fissile materials reduces those threats.

d) It is primarily Russian stockpiles of HEU that we wish to see reduced, and they have already taken the first step by agreeing to sell 500 t of weapons HEU to the United States.

e) Once HEU is blended down to LEU, it cannot be used in weapons without re-enrichment. Any of the world's abundant supplies of LEU could conceivably be further enriched to make HEU—at great expense and only with sophisticated technology.

f) Fusion energy is not projected to be a viable source of energy, even by its most ardent proponents, until about the 2040 timeframe. The HEU disposition program proposes to destroy HEU, not proliferate it, and will not extend the life of reactors or cause new ones to be built.

b) The lead time for effectively implementing the proposed alternative(s) depends in too great a measure on the willingness and readiness of former USSR arsenals to come to a meaningful agreement.

c) DOE proposals assume that within a few years of down-blending the threat of proliferation will have been abated. This approach is unwarranted in view of all historical evidence. It is high folly.

d) Even should the United States unilaterally down-blend its warhead stocks, few other countries, France, to single out one, would never participate in a cooperative and parallel enterprise.

e) Down-blending to the levels for power plant use will not assure that such fuels, worldwide, cannot be subverted to re-concentration by hostile foreign governments. Witness Saddam Hussein's ability to buy the requisite facilities.

f) The rapidly approaching era (2010?) of fusion power will likely obviate any large-scale, long-term programs to continue with fission power into the near future. Many of the present nuclear power plants are approaching their decommissioning age due to wear and tear. Why then proliferate HEU into a quadrangle spiderweb of down-blenders in which the chances of catching an accident are quadrupled?

g) The continuing increase of spent fuel wastes, abetted by any program of down-blending weapons-grade uranium to fuel-grade, only prolongs the agony of wastes disposal. Surely the United States has already enough headaches with cleaning up the already contaminated areas such as Hanford, Savannah River, Rocky Flats, etc., etc., to say nothing about global environmental contamination due to previous shoddy practices, Chernobyl etc.

10.021  
cont.

g) The HEU disposition program would not produce additional spent fuel, but rather would replace spent fuel that would be generated anyway. In fact, environmental consequences are less while getting rid of HEU.

h) Economic and environmental justice concerns are addressed in the HEU EIS in response to requirements by the Council on Environmental Quality and DOE NEPA regulations.

i) Some of the sequestration of HEU abroad is inadequate to eliminate it as a serious proliferation concern. Consequently, reducing global stockpiles of surplus HEU is considered the best way to reduce the proliferation threat. If we do not begin to reduce our own stockpiles, Russia will not continue to reduce theirs. Far from being a band-aid solution, eliminating HEU by blending it down to non-weapons-usable LEU is a permanent solution to this problem.

ZARS, PETER, ERWIN, TN  
PAGE 3 OF 3

h) Why highlight economic and minority concerns at a time when the general decommissioning of World War II and Cold War facilities has already caused far greater dislocations?

i) A continued sequestration of U.S. and foreign HEU materials, under secure guard here and abroad, would surely be the best interim response to the current crisis. Down-blending would be a BAND-AID® solution to a massive hemorrhage. No one has yet attempted to storm Fort Knox! (But they certainly have been after local banks.)

j) Should the weight of other comment dictate the blend-down options decided upon in the subject EIS, we suggest that all such activity be assigned to DOE's Y-12 Plant in Oak Ridge, Tennessee, and nowhere else. There is where the manpower and the nuclear expertise, as well as the stored HEU is presently concentrated.

We enclose a bibliography of previous problems at NFS, glossed over in the DOE volume, including the curious reference in the 1993 World Almanac and its subsequent deletion, as well as pertinent data as to the flood proneness of that 1957 facility. There have also been enough recent safety incidents at NFS to warrant renewed caution.

Most respectfully submitted, *P.H. Zars*  
P.H. Zars

10.021  
cont.

10.008

10.008: The Y-12 Plant is one of the four alternative sites evaluated in the HEU EIS as having the capability to provide uranium blending processes. To be in compliance with NEPA, the HEU EIS must assess the environmental impacts of the proposed action and alternatives at all potential candidate sites without favoring one over another and provide this information to the decisionmakers.