Document D0020

Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

January 15, 2004

Gary S. Hartman
DOE-Oak Ridge Operations
P.O. Box 2001
Oak Ridge, TN 37831

Dear Mr. Hartman:

Comments on the Draft Environmental Impact Statements for Depleted Uranium Hexafluoride (UF_6) Conversion Facilities

The Oak Ridge Site Specific Advisory Board (ORSSAB) has considered the Draft Environmental Impact Statements for Depleted UF_6 Conversion Facilities.[1,2] ORSSAB provided a recent recommendation to the U.S. Department of Energy–Oak Ridge Operations concerning the Depleted UF_6 Disposition Program at the Department of Energy's East Tennessee Technology Park.[3] At this time, ORSSAB would like to affirm that recommendation and submit it as comments on the proposed activities described in these documents. A copy of that recommendation is enclosed. ORSSAB would also like to take this opportunity to clarify that the overall intent of the recommendation is to accelerate the removal of all UF_6 cylinders in inventory at the East Tennessee Technology Park. D0020-1

Sincerely,

David N. Mosby, Chair

Enclosure

cc/enc: Dave Adler, DOE-ORO
Pat Halsey, DOE-ORO
Connie Jones, EPA Region 4
John Owsley, TDEC
Sandra Waisley, DOE-HQ

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[1] U.S. Department of Energy, *Draft Environmental Impact Statement for Construction and Operation of a Depleted Uranium Hexafluoride Conversion Facility at the Paducah, Kentucky, Site*, DOE/EIS-0359, December 2003.

[2] U.S. Department of Energy, *Draft Environmental Impact Statement for Construction and Operation of a Depleted Uranium Hexafluoride Conversion Facility at the Portsmouth, Ohio, Site*, DOE/EIS-0360, December 2003.

[3] Oak Ridge Site Specific Advisory Board, "Recommendation Concerning the Depleted Uranium Hexafluoride Disposition Program at the DOE East Tennessee Technology Park," Letter to Mr. Steve McCracken, July 10, 2003.

P.O. Box 2001, EM-91, Oak Ridge, TN 37831 • Phone 865-576-1590; 1-800-382-6938 • Fax 865-576-5333
Web: http://www.oakridge.doe.gov/em/ssab

Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

July 10, 2003

Mr. Steve McCracken
Assistant Manager for Environmental Management
DOE-Oak Ridge Operations
P.O. Box 2001, EM-90
Oak Ridge, TN 37831

Dear Mr. McCracken:

Recommendation Concerning the Depleted Uranium Hexafluoride Disposition Program at the DOE East Tennessee Technology Park, Oak Ridge, Tennessee

At our July 9, 2003, meeting, the Oak Ridge Site Specific Advisory Board approved the enclosed recommendation.

We appreciate your consideration of our recommendation and look forward to receiving your written response.

Sincerely,

David N. Mosby, Chair

Enclosure

cc/enc: Dave Adler, DOE-ORO
Pat Halsey, DOE-ORO
Dave Hutchins, DOE-ORO
Connie Jones, EPA Region 4
John Owsley, TDEC
Sandra Waisley, DOE-HQ

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Oak Ridge Site Specific Advisory Board Recommendation Concerning the Depleted Uranium Hexafluoride Disposition Program at the DOE East Tennessee Technology Park, Oak Ridge, Tennessee

BACKGROUND

A uranium enrichment process called gaseous diffusion was used at the Oak Ridge Gaseous Diffusion Plant, now called the East Tennessee Technology Park (ETTP), from 1945 until 1985. The process physically separated naturally occurring uranium, fed as a uranium hexafluoride (UF_6) gas that solidifies at ambient temperatures, into a product enriched in uranium-235 and a depleted stream that was withdrawn and stored in cylinders allowed to accumulate on site. Most cylinders contain either 10 or 14 tons of UF_6, but there are a number of cylinders of smaller sizes and ones that are empty or contain heels.

Overall, there are approximately 57,000 storage cylinders containing over 500,000 metric tons of UF_6 at the ETTP, Paducah, Kentucky, and Portsmouth, Ohio, gaseous diffusion plants. Since there are more cylinders at Paducah (about 38,000), transporting the 6,364 ETTP cylinders to Portsmouth would bring the inventories into balance and facilitate the design and operation of two similarly sized conversion plants. The Tennessee Department of Conservation (TDEC) and DOE signed a Commissioner's Order in 1999 requiring DOE to submit a plan to remove the depleted UF_6 (DUF_6) cylinders and their contents no later than December 31, 2009. The Oak Ridge Comprehensive Closure and Performance Management Plans accelerate this schedule to the end of fiscal year 2007 to accomplish closure of ETTP. In 2002, DOE awarded a conversion contract to Uranium Disposition Services for two plants and also decided that Bechtel Jacobs Corporation (BJC) and Uranium Disposition Services (UDS) will share responsibility for shipment of the ETTP cylinders to Portsmouth. Requirements for shipping UF_6 cylinders are contained in the U.S. Department of Transportation Hazardous Materials Regulations, 49 CFR Parts 100–185 and ANSI N14.1, *Uranium Hexafluoride – Packaging for Transport*. BJC will be responsible for shipping ANSI N14.1-compliant cylinders in 2003 through 2005, and UDS will be responsible for shipping ANSI N14.1-noncompliant cylinders in 2005 through 2007.

DISCUSSION

On May 14, 2003, Mr. David Hutchins, Manager of the DUF_6 Cylinder Program at ETTP, gave a review to the Oak Ridge Site Specific Advisory Board (ORSSAB) on plans for shipping cylinders at ETTP to Portsmouth. The presentation focused on the ANSI N14.1-compliant cylinders. DOE notes that these shipments do not involve "Highway Route-Controlled Quantities," and are not subject to any laws that require specific routing, notifications, or escorts, but they are taking some additional steps. The questions asked by members of the Board and the public related to emergency response and preparedness training, communications with local communities, shipping logistics, and hazards inherent to the material. The Board was told that some consideration was given to disguising the cylinders for security purposes but that ability to identify the material in any incident was decided to be more important. Shipment by barge and air were discounted. DOE prefers highway shipments by truck, claiming they're more cost

effective than rail. Truck shipments were said to have higher probability of accident occurrence than rail, but rail accidents would have higher consequences due to more cylinders potentially being involved. Truck shipments allow greater potential selection of routes. DOE has worked primarily through state authorities rather than directly with every local community along the way to develop the transportation plan and to train emergency response personnel. The Department of Transportation has set an initial evacuation distance for UF_6 from a large spill at 100 meters (1/16 mile) and then 300 meters (3/16 mile) in event of a major fire. By comparison, evacuation distances, in event of a fire, are 800 meters (1/2 mile) for gasoline and chlorine and 1,600 meters (1 mile) for propane.

Historical research indicates that DOE and its predecessor agencies have been involved in efforts to make the handling of uranium hexafluoride safer for a long time. In 1966, fire tests of bare, UF_6-filled cylinders were conducted at the Oak Ridge Gaseous Diffusion Plant Rifle Range to determine if cylinders would hydrostatically or explosively rupture and the time available for fire fighting before either incident occurred.[1] The tests confirmed that a UF_6 cylinder rupture of explosive force is possible and that it can occur within a time sufficiently short as to preclude fire fighting unless initiated very promptly. It was also concluded that a type of foam insulation provided a high degree of fire protection for shipments.

Safety issues related to the storage of DUF_6 have continued to be investigated up through preparation and maintenance of current safety basis documents for the cylinder storage yards.

On April 30, 2002, the Department of Transportation issued a notice of proposed rulemaking (NRPM) to bring about compatibility of its regulations with those of the International Atomic Energy Agency (IAEA). One area that has the greatest potential for substantially increased costs to shippers of radioactive materials concerns large stocks of DUF_6 stored in currently authorized packagings at three different locations. If this material should be moved off-site to one or more conversion facilities, then it is likely that the current packagings will not meet the standards proposed in this NPRM. In that case the existing packages likely will be required to be overpacked in order to meet the standard for a hypothetical fire test. The ramification of differences between U.S. and IAEA regulations is something that needs to be better understood.

RECOMMENDATION

ORSSAB fully supports the accelerated shipping schedule for DUF_6 cylinders from ETTP. Additionally, we recommend that DOE keep open and not preclude transportation options other than highway. Finally, we recommend that DOE manage the safety aspects of the program consistent with the entire knowledge base of the hazards associated with handling UF_6 and inform the public about any plans to seek exemptions from more stringent requirements that may be evolving.

D0020-1 (cont.)
D0020-2
D0020-3

[1] Mallett, A.J., *ORGDP Container Test and Development Program – Fire Tests of UF_6-Filled Cylinders*, K-D-1894, Union Carbide Nuclear Division, ORGDP, January 12, 1966.

Document D0021

Comments on the UF6 Environmental Impact Statement

Paul D. Kalb, Division Head
Environmental Research & Technology Division
Brookhaven National Laboratory
Upton, NY 11973

As a researcher at Brookhaven National Laboratory (BNL) I have been involved with the issue of depleted uranium for a number of years. As you are probably aware, BNL developed, tested and patented a process for the encapsulation of various forms of DU in polyethylene. The secondary end-use product (sometimes referred to as DUPoly) is a dense solid that can be used for shielding or ballast applications. It provides the same benefits as DUCrete but has advantages in that it can be easily formed to complex shapes, re-worked at a later date, and has good ability to shield both high energy gamma and neutron radiation. We recently completed fabrication of a full-scale prototype DUPoly transport/disposal cask and then successfully used it to transport a highly radioactive RaBe source and dispose the material and cask at Hanford without additional handling and radiation exposures to workers. We have discussed the use of this material for dry-cask storage of spent nuclear fuel with NAS Corp. and its use as a shielding/construction material at the Yucca Mountain repository with Argonne National Laboratory.

I was disappointed to find that the EIS did not take the potential for re-use of the DU into account, but rather focused on issues of disposal. Turning our waste into useful, commercially viable products is a tremendous economic and sociological benefit. While the UF6 website does include several references to secondary end-use of DU, including its use in DUPoly, the EIS itself does not consider this alternative. In my view, the additional benefits associated with this alternative make the treatment of DUF6 a much more cost-effective and attractive solution. D0021-1

Document D0022

OhioEPA
State of Ohio Environmental Protection Agency
Southwest District

401 East Fifth Street
Dayton, Ohio 45402-2911

TELE: (937) 285-6357
FAX: (937) 285-6249

January 29, 2004

Mr. Gary S. Hartman
USDOE ORO
P.O. Box 2001
Oak Ridge, Tennessee 37831

Mr. Hartman:

Ohio EPA has reviewed the Draft Environmental Impact Statement for Construction and Operation of a Depleted Uranium Hexafluoride (DUF6) Conversion Facility and comments on this draft are listed below. As you are aware, Kentucky, Tennessee and Ohio have been working with DOE for many years to address the multiple challenges associated with management and conversion of DUF6. We expect that collaboration to continue throughout the construction, operation and cylinder management and transportation portions of this project. D0022-1

Ohio EPA concurs with the preferred alternative of constructing a DUF6 conversion facility at the Portsmouth site. We also concur with transporting DUF6 cylinders from the ETTP at Oak Ridge to the Portsmouth site for conversion. We are currently negotiating administrative orders with DOE to allow this to happen. Please contact me if you have any questions about these comments.

Sincerely,

Graham E. Mitchell
Chief, Office of Federal Facilities Oversight

Ohio EPA Comments on the Draft Environmental Impact Statement for Construction and Operation of a Depleted Uranium Hexafluoride Conversion Facility at the Portsmouth, Ohio Site.

General Comments

1) A closed RCRA unit (The X-616 Chromium sludge Lagoon) which is in post-closure care is located in the area of Alternative Location A. A deed notice was submitted to the Pike County Planning Commission on July 7, 1992. There are also monitoring wells associated with this unit which are used to evaluate the status of the groundwater contamination in that area. Please provide a description of how the restricted land and these wells will be avoided during the construction and operation of the facility. D0022-2

2) The EIS should be expanded to discuss the potential to accept the DUF_6 cylinders from USEC should the Centrifuge Facility be constructed and operated at Portsmouth. The EIS should discuss the impact of longer operation and the potential need to increase the size of the Portsmouth Facility to deal with the additional DUF_6 cylinders. D0022-3

3) The EIS should recognize that the current clean-up at the facility is governed by three Administrative Consent Orders; the 1989 Ohio Consent Decree, the 1997 Three Party Administrative Order on Consent and the 1999 Administrative Order for Integration. The document should also recognize that the DUF_6 is considered a hazardous waste by the State of Ohio and that there is an Administrative Order governing how the DUF_6 cylinders are to be managed at the site. D0022-4

4) Please provide a discussion of how the cylinders will be prioritized for conversion. Will the older cylinders be processed first? Will the cylinders from ETTP be processed first? What is the current strategy for determining which cylinders will be addressed first during the conversion process? D0022-5

5) Please provide a description of the type of inspections that will be conducted of the cylinders during the four month aging period to determine if the cylinder wall has been breached or damaged during the conversion process. D0022-6

6) You may wish to consider decommissioning and decontaminating the X-616 SWMU and the old fire training area to make additional room for cylinders to be stored and managed before and after conversion. D0022-7

7) The EIS fails to describe in Section 5.9 what is expected during decommissioning and decontamination (D& D) of the facility. The EIS should provide some detail regarding what will happen to the waste from the D&D facility and where the waste is likely to go. For instance, some of the material may be construction debris and is likely be interred in a facility that excepts construction debris waste, other waste would be considered mixed waste and shall be shipped off site to an appropriate facility. D0022-8

Specific Comments

1) Table S-2 page S-13: The table should also include a bulleted item under Proposed Action describing how the DUF_6 cylinders created by USEC during the centrifuge operation (should the facility be constructed in Portsmouth) would be maintained at the facility and converted at the UDS Facility. D0022-9

2) Page S-21, Section S.2.2.5: Will the noncompliant cylinders remain in the over packs? If not, how will these cylinders be moved around the facility once received at Portsmouth? D0022-10

1) Page S-39, S.5.5 Water and Soil: The text should indicate that best available practices (BAT) will be implemented at the site during construction to eliminate or reduce the risk of potential soil, surface water, and groundwater contamination from construction of the facility. The text indicates that good construction practices will be implemented during construction but does not provide any detail. It is common for a construction project as described in the text to implement a BAT policy during construction to minimize impact on the soils, surface water and ground water at the construction site. D0022-11

4) Page S-39, S.5.6 Socioeconomics: The text indicates that construction of the facility would create 310 jobs and the operation of the conversion facility would create 320 jobs. The information provided to Ohio EPA indicates that approximately 100-150 construction jobs would be created and approximately 140-150 jobs would be needed to operate the facility. Please provide the correct reference to the number of jobs created for construction and operation of the facility. D0022-12

5) Page S-41, section S.5.8: This section states that a stabilizer will be added to the heels in the emptied cylinders. What type of stabilizer will be used and will this stabilizer produce any gases which will need to be captured? D0022-13

6) Page S-41, section S.5.8: Will the U_3O_8 generated be considered a LLW or a LLMW? How will this be determined? D0022-14

1) Page S-47, S.5.18 Unavoidable Adverse Impacts: Please provide an explanation as to why it may be necessary to disturb up to 65 acres of land during construction. Please provide an area map showing the extent of the area which may be disturbed. D0022-15

2) Page S-47, S.5.18 Unavoidable Adverse Impacts: Please provide a detailed list of the possible loss of terrestrial and aquatic habitats from construction and disturbance of wildlife during operations. Include a description of the type of wildlife which may be impacted due to construction. Also, describe which areas may be irrevocably harmed due to the presence of the facility. D0022-16

3) Page S-54, S.7 Preferred Alternative, Table S-6: – Under Environmental Consequence, the Bounding radiological accident for the proposed action is given as an earthquake damaging the U_3O_8 storage building and releasing 145 lb. of depleted U_3O_8. For no action, a cylinder ruptures-fire is given as the bounding accident with 24,000 lb of UF_6 released. On Pg. S-12, the cylinder accident is stated D0022-17

to be one involving several cylinders in a fire. On Pg. S-68, under the earthquake scenario, 10% of the stored containers are assumed to be breached. More definitive data needs to be presented to support the quantities released. D0022-17 (cont.)

4) Page 2-23, Section 2.2.7: The EIS discusses the possibility of accepting cylinders from the Paducah facility. Currently, there is no mechanism in place that allows for the transfer of cylinders from the Paducah facility to Portsmouth. As you are aware the State of Ohio and US DOE are currently negotiating a Director's Administrative Order, including a management plan for the shipment and management for the cylinders from ETTP. Please provide a description of the regulatory requirements which would be required in order for the State of Ohio to accept the DUF_6 cylinders from Paducah. Furthermore, it is likely that Portsmouth may be required to accept cylinders from an enrichment facility in New Mexico or a new USEC centrifuge facility. It would make more sense to increase the size of the facilities being built so that a greater number of cylinders can be addressed in a shorter period of time. Both facilities should be sized to have the capability to address all the DUF6 cylinders currently on site as well as others which may be shipped from other facilities in the future. D0022-18

5) Page 2-25, Section 2.3.5 Other Transportation Modes: Due to the difficulties cited by the document with air and barge transportation, it appears that these modes of transportation are not being seriously considered. If this situation changes, the state would expect adequate NEPA review in order to assess risks associated with those methods. D0022-19

6) Page 2-27, Section 2.4.2: Please refer to General Comment #7 above in regard to D&D. D0022-20

7) Page 2-29, Section 2.4.2.2.2: Please make reference to the approved DUF6 management plan that is currently in place and agreed to by US DOE. The DUF6 management plan outlines the steps US DOE must take should a breach in the DUF6 cylinders occur. D0022-21

8) Section 5.2.2.3.1 Based on the information provided in this section. It appears that fugitive dust emissions (PM10, and PM2.5) concentrations (ug/m3) from construction activities may exceed the National Ambient Air Quality Standards NAAQS for PM10 and PM2.5 . Additional emission control methods, operational restrictions, or monitoring need to be implemented to assure that the NAAQS are not exceeded. D0022-22

Document D0023

Ernie Fletcher
Governor

LaJuana S. Wilcher
Secretary

Commonwealth of Kentucky
Environmental & Public Protection Cabinet
Department for Environmental Protection
Division of Waste Management
14 Reilly Road
Frankfort KY 40601-1190

February 2, 2004

Mr. William E. Murphie, Manager
U.S. Department of Energy
Portsmouth Paducah Project Office
1017 Majestic Place Drive
Suite 200
Lexington KY 40513

Mr. Glenn E. VanSickle, Paducah Manager of Projects
Bechtel Jacobs Company LLC
761 Veterans Avenue
Kevil, Kentucky 42053

RE: Draft Environmental Impact Statement for Construction and Operation of a Depleted Uranium Hexaflouride Conversion Facility at the Paducah, Kentucky, Site
DOE/EIS-0359

Dear Mr. Murphie and Mr. VanSickle:

The Division of Waste Management (Division) has completed its review of the DUF6 Environmental Impact Statement (EIS) received on November 24, 2003. Several concerns were identified during the review. The Division's comments are outlined in the attached pages. Also attached separately are comments from the Cabinet for Health Safety (CHS). Please edit the draft EIS consistent with the enclosed comments.

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Mr. Murphie,
Mr. VanSickle
Page 2
January 30, 2004

We look forward to the submittal of a revised EIS. Please contact Lori Veal at (502) 564-6716 if you have any questions or need additional information.

Sincerely,

Michael V. Welch, P.E., Manager
Hazardous Waste Branch

MVW/lmv

Attachment

c: Randy McDowell, OLS-Frankfort
Mike Welch, DWM-Frankfort
Lori Veal, DWM-Frankfort
Tuss Taylor, DWM-Frankfort
DWM Reading file # 1190
DOE Reading file

Draft Environmental Impact Statement for Construction and Operation of a Depleted Uranium Hexaflouride Conversion Facility at the Paducah, Kentucky Site, Paducah, Kentucky

Specific Comments:

1. **Summary, Section S.1.1.2, Page S-5 and S-6:** This section outlines the development of concern over DOE's DUF6 inventory beginning in 1995. The 3rd paragraph describes an agreement reached in 1998 between DOE and Ohio EPA (OEPA) that resulted in the implementation of a DUF6 management plan governing the storage of DUF6 cylinders at Portsmouth. The 4th paragraph discusses a consent order entered into in 1999 by DOE and the Tennessee Department of Environment and Conservation (TDEC) regarding the implementation of a UF6 management plan for cylinders stored at ETTP, as well as removal or conversion of DUF6 cylinders at ETTP. An addition must be included in this section to discuss the Agreed Order signed by DOE and Kentucky Department for Environmental Protection in October 2003 regarding the implementation of a DUF6 management plan for cylinders stored at PGDP, as well as other issues associated with the proposed DUF6 conversion facility at Paducah. D0023-1

2. **Section 1.1.2, Page 1-4 and 1-5:** See Specific Comment #1 above. D0023-2

3. **Summary, Section S.5.2.2, Page S-30:** Impacts from a certain type of accident were investigated by DOE but not included in the draft EIS due to security concerns. The document states that a classified appendix will be provided to proper state and local officials for review and comment. Please identify which "proper state and local officials" will review the classified appendix. D0023-3

4. **Summary, Section S.5.2.2, Page S-31:** Current UDS facility design includes the storage and use of anhydrous NH_3 for production of hydrogen for the conversion process. Conversion facility scenarios involving the accidental release of NH_3 were evaluated. However, the document states that the use of natural gas for hydrogen production is being investigated, which would eliminate the need for NH_3. DOE must define in the EIS the specific process and products that will be utilized in the conversion facility in order to complete a relevant evaluation of environmental impacts. D0023-4

5. **Summary, Section S.5.19, Page S-45:** Please clarify the statement that the land used to dispose of conversion products would be an "irreversible and irretrievable" commitment of resources. The Kentucky Division of Waste Management (KDWM) does not agree with the designation of this land as an "irreversible and irretrievable resource" or the limitations implied regarding any natural resources damages that could occur due to construction and operation of the conversion facility. D0023-5

6. **Section 1.1.1, Page 1-4:** The first paragraph describes the agreement between DOE and USEC signed in June 2002 to transfer ownership of up to 23,300 tons DUF6 from USEC to DOE between 2002 and 2006. A clear determination must be made with regards to who will be responsible for management of these cylinders. The EIS must be revised to indicate if DOE plans to manage these cylinders under the 2003 DUF6 Agreed Order between Kentucky and DOE. D0023-6

7. **Section 2.4.2.3, Page 2-30:** This section outlines safety considerations related to cylinder transportation. The highest risk is shown to be associated with accidents involving NH_3 or HF shipments. Please include consideration of risks associated with shipping UF_6 cylinders from ETTP to the selected conversion sites. D0023-7

8. **Section 3.1.5.1, Page 3-15:** The sixth paragraph states "In 2000, the maximum uranium concentration from DOE outfalls was 0.09 mg/L. This value is below the derived concentration guide of 600 pCi/L." Please state these values in common units in order to provide a clear comparison between the contamination level and the regulatory limit. D0023-8

9. **Section 5.1.1.1, Page 5-3:** Table 5.1-1 lists frequency of inspections, monitoring, and maintenance for cylinders for 2003-2007. This section must provide clarification that inspection and maintenance activity schedules will be consistent with requirements of the 2003 DUF6 Agreed Order between Kentucky and DOE. D0023-9

10. **Section 5.2.1.4, Page 5-28:** This section discusses wastewater that will be produced during construction, treated prior to release, and discharged to a KPDES permitted outfall or to an existing sewer. It is further stated that dilution will occur once the discharge reaches Bayou Creek and the Ohio River, and therefore contamination of surface water from the discharge will be negligible. This section must be edited to state that the discharge will meet KPDES limits **at the outfall**, regardless of how much dilution is expected to occur downstream. D0023-10

11. **Section 5.2.2.3.1, Page 59:** This section indicates that fugitive dust emission concentrations from conversion will approach the National Ambient Air Quality Standards NAAQS for PM2.5. Elaborate on emission control methods, operational restrictions, or monitoring that will be implemented to assure that the NAAQS are not exceeded. D0023-11

12. **Section 5.2.2.4.1, Page 5-65:** The EIS maintains there will be no process wastewater discharge from the facility during conversion and that all blowdown water would be circulated back into the process with no planned discharges. Thus impacts on surface water are assumed to be negligible. The EIS must address the possibility and impacts of an accidental or emergency discharge of process water or blowdown water that could affect surface water. Please specify the distance to potential receiving waters and possible contaminants of concern. D0023-12

13. **Section 5.2.2.4.1, Page 5-65:** The third paragraph describes an accident scenario in which an earthquake would cause the rupture of an aboveground pipeline carrying liquid HF from the conversion building to the storage building. The scenario assumes that "because response and cleanup would occur within a relatively short time after the release (i.e. days or weeks), the HF would have little time to migrate into the soil. Removal of the contaminated soil would prevent any problems of contamination of either surface or groundwater resources. Therefore, there would be no impacts to surface water or groundwater from this type of accident." If cleanup was impeded by adverse weather conditions, then stormwater runoff and/or infiltration could transport contaminants to surface water or groundwater within a short time. This section must be edited to consider the possibility that such an accident could endanger surface water and groundwater quality. D0023-13

14. **Section 5.2.2.4.1, Page 5-65:** Define the origin and expected constituents of the "sanitary wastewater" that is proposed to be treated in the wastewater treatment plant and discharged to Bayou Creek. D0023-14

15. **Section 5.2.4, Page 5-89:** This section discusses the impacts associated with the use and potential sale of conversion byproducts. However, the discussion fails to consider time periods for storage of the byproducts before disposal or reuse. Estimates of storage times must be given along with consideration of how storage of the conversion products may impact human health and the environment. D0023-15

16. **Section 5.2.4, Page 5-90:** This section does not provide an adequate description of cylinders that might be transported from ETTP to Paducah for conversion. DOE must provide more information regarding contents and contaminants of cylinders compared to the cylinders currently stored at PGDP along with assessment of potential environmental impacts. D0023-16

17. **Section 5.9, Page 5-118:** This section fails to adequately address impacts from future decommissioning and decontamination (D&D) of the facility. Further details must be provided regarding disposal of waste from D&D of the facility, since portions of the waste would likely be classified as hazardous or mixed waste. D0023-17

General Comments:

1. The EIS states that no hazardous wastes will be disposed of or treated on site at the conversion facility, nor will any hazardous wastes that are generated during conversion be stored on site for more than 90 days. Therefore, UDS assumes that no hazardous waste permit will be required. Since DOE does not treat DUF6 as a hazardous waste, the EIS does not evaluate the need to have a hazardous waste permit for converting/treating the DUF6. In addition, the no action alternative considers only LLW and LLMW that would be generated during construction from maintenance of cylinder yards and cylinder painting and scraping operations. It does not consider management of the DUF6 itself as a mixed waste. The Division disagrees with these assumptions, based on Condition 7 in the 2003 DUF6 Agreed Order which states: "The Cabinet (Natural Resources and Environmental Protection Cabinet) alleges that the DUF6 generated by DOE and USEC is a "Waste" as defined by KRS 224.010(31) and is subject to the waste determination requirement in KRS 224.46-510". D0023-18[2]

2. The EIS proposes that if the HF conversion by-product cannot be sold to the chemical industry, it will be converted to CaF_2 for sale or disposal. Generation of large volumes of CaF_2 would have significant impacts on transportation and waste management plans. DOE has not determined whether CaF_2 would need to be disposed of as a non-hazardous solid waste, or a LLW. Additionally, DOE has not determined whether CaF_2 would be considered DOE waste if the conversion was performed by a private commercial enterprise. DOE must edit the EIS to adequately address these issues. D0023-19

3. Comments previously issued by KDWM for the PEIS should be considered applicable to this EIS. KDWM requests that DOE respond to these comments as relevant to the EIS. D0023-20

4. The EIS should be expanded to discuss the potential to accept DUF_6 cylinders from USEC due to continued conversion operations at PGDP, and due to cylinder transport from ETTP. The EIS should discuss the impacts of longer operation and the potential need to increase the size of the Paducah Facility to deal with the additional DUF_6 cylinders. In addition, specify where additional cylinders would be stored in the event that cylinders are transported from ETTP to Paducah for conversion. D0023-21

[2]Comment withdrawn by the Kentucky Division of Waste Management on March 12, 2004 (Hatton 2004).

ERNIE FLETCHER
GOVERNOR

CABINET FOR HEALTH AND FAMILY SERVICES
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JAMES W. HOLSINGER, JR., M.D.
SECRETARY

MEMORANDUM

To: **Lori Veal,**
Kentucky Division of Waste Management

From: **Robert L. Johnson, Manager**
Radiation Health & Toxic Agents Branch

Date: **January 29, 2004**

Subject: **REVIEW PADUCAH DUF6 DRAFT ENVIRONEMNTAL IMPACT STATEMENT**

The Radiation Health and Toxic Agents Branch (RHTAB) has completed a preliminary review of the Paducah Draft DUF6 Environment Impact Statement for the HF and CaF2 separation process. The RHTAB's comments are attached and will be further clarified with comment from UK .

Cc: Eric Scott. REMS
Steve Hampson, UK
Tuss Taylor, NREPC

PADUCAH DEIS Comments
January 29, 2003
Page One

1. **Verification of Compliance with the DOE Public Dose Limit, page E-10, second paragraph.** Please provide a copy of the basis for presumption of compliance decision and how the DOE demonstrated compliance with the a public dose limit of 100 mrem TEDE in a year by limiting the maximally exposed member of the public to 25 mrem.. I have not had the opportunity to review any position determination related to this method of compliance verification and would be interested in reviewing the document before agreeing to the general process identified in the Draft environmental Impact Statement. D0023-22

2. **Characterization of HF and CaF2 Produced during conversion, Page E-5, third paragraph, and Page E.4.1, first paragraph.** Both references indicate Framatome Advanced Nuclear Power, Inc. (ANP) is licensed by the Nuclear Regulatory Commision (NRC). I question DOE's capability to commercially market HF and CaF2 developed during conversion without licensing due to the amount of Uranium present in bulk, even though depleted Uranium. Further research will be required. D0023-23

Document D0024

Central Midwest Interstate Low-Level Radioactive Waste Commission
1035 Outer Park Drive ❖ Springfield, IL 62704 ❖ 217/785-9982

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January 29, 2004

Gary S. Hartman
Oak Ridge Operations
P.O. Box 2001
Oak Ridge, TN 37831

Re: The U.S. Department of Energy's Draft Environmental Impact Statements for the Construction and Operation of Depleted Uranium Hexafluoride Conversion Facilities at the Paducah, KY and Portsmouth, OH Sites

Dear Mr. Hartman:

The Central Midwest Interstate Low-Level Radioactive Waste Commission is concerned about the safe management of low-level radioactive waste within the borders of the two-state compact region of Illinois and Kentucky. While the Commission acknowledges that the DUF_6 addressed in these Draft Environmental Impact Statements (DEIS's) is federal waste not subject to the Commission's jurisdiction, it is concerned for its safe management nonetheless and offers these comments on the two DEIS's. Unless specifically noted, the comments contained in this letter apply to both DEIS's.

D0024-1

Section 2.2.4 of the DEIS's states "It is unknown how many DUF_6 cylinders do not meet DOT transportation requirements." This section should reference the LLNL report *Depleted Uranium Management Program; the Engineering Analysis Report for the Long-Term Management of Depleted Uranium Hexafluoride* which estimates that half to all of the DUF_6 cylinders at the ETTP do not meet Department of Transportation (DOT) requirements. Failure to do so might indicate that DOE is trying to understate the magnitude of the effort

Dr. Edward S. Ford, Chairman ❖ Gary N. Wright, Secretary-Treasurer ❖ Philip J. Rock, Commissioner ❖ Marcia S. Marr, Executive Director

required to render the East Tennessee Technical Park (ETTP) cylinders roadworthy or the need to seek a variance from DOT. D0024-1 (cont.)

As part of the transportation analysis, the DEIS's do not address the impacts to local first-responders who would respond to any transportation accident. Both DEIS's indicate that there will be a significant number of DUF_6 and UF_6 shipments from the ETTP to either Portsmouth or Paducah, possible DUF_6 shipments from Paducah to Portsmouth, and possible DUF_6 shipments from a yet to be developed enrichment facility to one or both of the conversion facilities. D0024-2

The analysis presented exposure scenarios for both low and high consequence accident events. Various assumptions must have been made regarding the nature of these events and the amount of material released to the environment. However, the DEIS's are silent with regard to how these events are managed from a practical perspective. Police, emergency medical personnel and firefighters respond to traffic accidents. What were the assumptions of their ability in terms of training, experience and available resources to deal with these potential accidents? D0024-3

The DEIS's are silent with respect to the need for providing assistance to these first responders. DOE should commit to provide assistance in the form of training and equipment for local first responders along the transportation routes selected for DUF_6 and UF_6 shipments. Without this assistance, some of the low-consequence events could become high-consequence with significant impact to public health and the environment.

DOE has provided "training the trainer" assistance to the Commonwealth of Kentucky, which had the net effect of training over 500 first responders in Kentucky. However, these responders are not physically equipped to respond to a potential transportation accident. DOE needs to provide direct financial assistance to local governments so they may purchase the equipment necessary to respond in case of an accident. Since these shipments would be "campaigned", the specific transportation routes would be defined such that the appropriate governmental entities can be easily identified. In addition, DOE should consider providing this assistance to local governments and first responders located along designated routes for the shipment of hazardous conversion products. D0024-4

The DOE should also schedule the DUF_6 and UF_6 shipments such that they would travel in convoys of approximately 10 trucks. This would allow Kentucky to more effectively manage its resources and escort these shipments through the state. With DOE acknowledging that half to all of the canisters at the ETTP do not meet DOT standards, it is incumbent on the state to ensure that these shipments are properly inspected prior to traveling on Kentucky roadways. D0024-5 D0024-6

The Commission thanks the DOE for the opportunity to provide comment on these DEIS's. Any question you may have pertaining to these comments may be directed to Michael Klebe, Illinois Emergency Management Agency, at 217-785-9986.

Sincerely,

Edward S. Ford
Chairman

Document D0025

JAN. 30. 2004 42AM ORDER SERVICE NO. 883 P. 2

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January 30, 2004

Mr. Gary Hartman
DOE-ORO Cultural Resources Management Coordinator
DOE Oak Ridge Operations
P.O. Box 2001
Oak Ridge, Tennessee 37831-2001

RE: DOE/EIS-0359
Draft Environmental Impact Statement for Construction of a Depleted Uranium Hexafluoride Conversion Facility in Paducah, Kentucky

Dear Mr. Hartman:

I understand that DOE is in the process of collecting comments on the Draft Environmental Impact Statement (DOE/EIS-0359) for the construction of the congressionally mandated depleted uranium hexaflouride (DUF_6) conversion facility in Paducah, Kentucky. This is an important step in the process of issuing a Record of Decision to finalize the EIS, which is critical to ensure that the construction of this important facility can begin on time. D0025-1

You may be aware that I sponsored Public Law 105-204 and provisions in Public Law 107-206 that require DOE to construct and operate DUF_6 conversion facilities in Paducah, Kentucky and Portsmouth, Ohio. More specifically, P.L. 107-206 expressly requires that construction of these facilities begin by July 31, 2004, and continue expeditiously thereafter. In recognition of the "two plant" mandate, DOE has completed Draft Environmental Impact Statements for both locations. The Draft EIS for Paducah assesses environmental risks associated with the construction and operation of the facility, related maintenance, and D&D, as well as materials and waste transportation issues.

Each of the sites under consideration for the Paducah conversion plant lie within the confines of the Paducah Gaseous Diffusion Plant reservation, where DOE currently maintains nearly 40,000 aging cylinders of DUF_6. Congress has directed DOE to process this DUF_6 into materials more suitable for long-term storage, use, or disposal. This will remove from Paducah the existing DUF_6 inventory, which currently poses significant inspection, maintenance, and security challenges. D0025-2

It is long past time to remove the environmental and public health threats this waste poses to our citizens. I respectfully urge the DOE to finalize the EIS and issue a Record of Decision so that construction can begin on the Paducah DUF_6 Conversion Facility by the deadline mandated by Congress. D0025-3

Sincerely,

MITCH McCONNELL
UNITED STATES SENATOR

MM/bdb

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