

3 RESPONSES TO COMMENTS

This section provides DOE's responses to comments received during the public comment period. Indices of the DOE responses are provided by document number (Table 3.1), by commentors' last name (Table 3.2), and by commentors' company/organization (Table 3.3). Most of the comments received apply to both the Portsmouth and the Paducah conversion facility EISs. However, there are some comment documents that apply specifically to one EIS or the other. An index of comment documents indicating their applicability to each EIS is given in Table 3.4. Table 3.5 lists only those comment documents that apply to the Portsmouth EIS, and Table 3.6 lists those comment documents that apply to the Paducah EIS. Table 3.7 lists the documents that apply to both EISs.

TABLE 3.1 Index of DOE Responses to Comments by Document Number

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D0028	Mulvenon, Norman A.	Oak Ridge Reservation Local Oversight Committee	3-90
D0029	Colley, Vina	Portsmouth/Piketon Residents for Environmental Safety and Security	3-92
D0030	Jurka, Charles and Vicki	Individuals	3-103
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Driver, Charles M.	Individual	D0001	3-9
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Ford, Edward S.	Central Midwest Interstate Low-Level Radioactive Waste Commission	D0024	3-72
Forsberg, Charles	Individual	D0014	3-37
Gawarecki, Susan	Oak Ridge Reservation Local Oversight Committee	D0013	3-36
Haire, M. Jonathan	Individual	D0019	3-43
Howell, Linda	Individual	D0004	3-21
Jurka, Charles and Vicki	Individuals	D0030	3-103
Jurka, Vickie	Active Citizens for Truth	D0008	3-26
Justice, T.J.	Ohio Governor's Office	D0006	3-25
Kalb, Paul D.	Individual	D0021	3-46
Kilrod, John	Individual	D0002	3-12
Klebe, Michael	Central Midwest Interstate Low-Level Radioactive Waste Commission	D0010	3-30
McConnell, Mitch	United States Senator, Kentucky	D0025	3-76
Meiners, Steve	Safety and Ecology Corporation	D0017	3-42
Minter, Dan	Paper, Allied-Industrial, Chemical and Energy International Union & Southern Ohio Diversification Initiative	D0005 & D0015	3-24, 3-37
Mitchell, Graham E.	State of Ohio Environmental Protection Agency	D0022	3-47
Mosby, David N.	Oak Ridge Site-Specific Advisory Board	D0020	3-45
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Orazine, Danny	Individual	D0007	3-25
Owsley, John	Tennessee Department of Environment and Conservation	D0032	3-117
Simonton, Gregory L.	Southern Ohio Diversification Initiative	D0016	3-40
Stachowski, Karen	Tennessee Department of Environment and Conservation	D0031	3-116
Taimi, T. Michael	United States Enrichment Corporation Inc.	D0027	3-82
Walton, Barbara	Individual	D0011	3-32
Welch, Michael V.	Kentucky Division of Waste Management	D0023	3-59
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TABLE 3.3 Index of DOE Responses to Comments by Company/Organization

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Oak Ridge Reservation Local Oversight Committee	D0013	Gawarecki, Susan	3-36
Oak Ridge Reservation Local Oversight Committee	D0028	Mulvenon, Norman A.	3-90
Oak Ridge Site-Specific Advisory Board	D0020	Mosby, David N.	3-45
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Ohio Governor's Office	D0006	Justice, T.J.	3-25
Paper, Allied-Industrial, Chemical and Energy International Union	D0015	Minter, Dan	3-37
Portsmouth/Piketon Residents for Environmental Safety and Security	D0003 & D0029	Colley, Vina	3-13, 3-92
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Southern Ohio Diversification Initiative	D0016	Simonton, Gregory L.	3-40
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United States Enrichment Corporation, Inc.	D0027	Taimi, T. Michael	3-82
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TABLE 3.4 Index of Commentors by EIS

Document Number	Name	Company/Organization	Ports. EIS	Paducah EIS
D0001	Driver, Charles M.	Individual	×	×
D0002	Kilrod, John	Individual	×	×
D0003	Colley, Vina	Portsmouth/Piketon Residents for Environmental Safety and Security	×	
D0004	Howell, Linda	Individual	×	×
D0005	Minter, Dan	Southern Ohio Diversification Initiative	×	
D0006	Justice, T.J.	Ohio Governor's Office	×	×
D0007	Orazine, Danny	Individual		×
D0008	Jurka, Vickie	Active Citizens for Truth		×
D0009	Donham, Mark	Individual	×	×
D0010	Klebe, Michael	Central Midwest Interstate Low-Level Radioactive Waste Commission	×	×
D0011	Walton, Barbara	Individual	×	×
D0012	Mulvenon, Norman	Individual	×	×
D0013	Gawarecki, Susan	Oak Ridge Reservation Local Oversight Committee	×	×
D0014	Forsberg, Charles	Individual	×	×
D0015	Minter, Dan	Paper, Allied-Industrial, Chemical and Energy International Union	×	×
D0016	Simonton, Gregory L.	Southern Ohio Diversification Initiative	×	
D0017	Meiners, Steve	Safety and Ecology Corporation	×	×
D0018	Baldrige, Paul R.	Ohio Department of Natural Resources	×	
D0019	Haire, M. Jonathan	Individual	×	×
D0020	Mosby, David N.	Oak Ridge Site Specific Advisory Board	×	×
D0021	Kalb, Paul D.	Individual	×	×
D0022	Mitchell, Graham E.	State of Ohio Environmental Protection Agency	×	
D0023	Welch, Michael V.	Kentucky Division of Waste Management		×
D0024	Ford, Edward S.	Central Midwest Interstate Low-Level Radioactive Waste Commission	×	×
D0025	McConnell, Mitch	United States Senator, Kentucky		×
D0026	Westlake, Kenneth A.	U.S. Environmental Protection Agency, Region 5	×	
D0027	Taimi, T. Michael	United States Enrichment Corporation Inc.	×	×
D0028	Mulvenon, Norman A.	Oak Ridge Reservation Local Oversight Committee	×	×
D0029	Colley, Vina	Portsmouth Piketon Residents for Environmental Safety and Security	×	
D0030	Jurka, Charles and Vicki	Individual		×
D0031	Stachowski, Karen	Tennessee Department of Environment and Conservation	×	×
D0032	Owsley, John	Tennessee Department of Environment and Conservation	×	×
D0033	English, Ruby	Individual		×
D0034	Mueller, Heinz J.	U.S. Environmental Protection Agency, Region 4		×

TABLE 3.5 List of Commentors on Only the Portsmouth EIS

Document Number	Name	Company/Organization
D0003	Colley, Vina	Portsmouth/Piketon Residents for Environmental Safety and Security
D0005	Minter, Dan	Southern Ohio Diversification Initiative
D0016	Simonton, Gregory L.	Southern Ohio Diversification Initiative
D0018	Baldridge, Paul R.	Ohio Department of Natural Resources
D0022	Mitchell, Graham E.	State of Ohio Environmental Protection Agency
D0026	Westlake, Kenneth A.	U.S. Environmental Protection Agency, Region 5
D0029	Colley, Vina	Portsmouth/Piketon Residents for Environmental Safety and Security

TABLE 3.6 List of Commentors on Only the Paducah EIS

Document Number	Name	Company/Organization
D0007	Orazine, Danny	Individual
D0008	Jurka, Vickie	Active Citizens for Truth
D0023	Welch, Michael V.	Kentucky Division of Waste Management
D0025	McConnell, Mitch	United States Senator, Kentucky
D0030	Jurka, Charles and Vicki	Individual
D0033	English, Ruby	Individual
D0034	Mueller, Heinz J.	U.S. Environmental Protection Agency, Region 4

TABLE 3.7 List of Commentors on Both the Portsmouth and Paducah EISs

Document Number	Name	Company/Organization
D0001	Driver, Charles M.	Individual
D0002	Kilrod, John	Individual
D0004	Howell, Linda	Individual
D0006	Justice, T.J.	Ohio Governor's Office
D0009	Donham, Mark	Individual
D0010	Klebe, Michael	Central Midwest Interstate Low-Level Radioactive Waste Commission
D0011	Walton, Barbara	Individual
D0012	Mulvenon, Norman	Individual
D0013	Gawarecki, Susan	Oak Ridge Reservation Local Oversight Committee
D0014	Forsberg, Charles	Individual
D0015	Minter, Dan	Paper, Allied-Industrial, Chemical and Energy International Union
D0017	Meiners, Steve	Safety and Ecology Corporation
D0019	Haire, Jonathan	Individual
D0020	Mosby, David N.	Oak Ridge Site-Specific Advisory Board
D0021	Kalb, Paul D.	Individual
D0024	Ford, Edward S.	Central Midwest Interstate Low-Level Radioactive Waste Commission
D0027	Taimi, T. Michael	United States Enrichment Corporation Inc.
D0028	Mulvenon, Norman A.	Oak Ridge Reservation Local Oversight Committee
D0031	Stachowski, Karen	Tennessee Department of Environment and Conservation
D0032	Owsley, John	Tennessee Department of Environment and Conservation

COMMENTOR D0001: Charles M. Driver**Comment D0001-001**

If there is anyone qualified to discuss the handling of DUF₆ and DU₄, it would be the persons who have handled it before and are now suffering from the effects of that handling.

Response D0001-001

As with all controlled materials at the DOE sites, the handling of DUF₆ and any other depleted uranium-containing material is subject to established procedures and guidelines that are based on many years of experience by the workers who have worked with such materials. For example, the manual "Uranium Hexafluoride: A Manual of Good Handling Practices, ORO-651," (DOE 1991) was first issued by the Atomic Energy Commission in 1957 to provide information on how UF₆ is handled in U.S. gaseous diffusion plants. The manual has gone through many iterations and has since been adopted by USEC as "The UF₆ Manual: Good Handling Practices for Uranium Hexafluoride, USEC-651," (available from USEC Inc., Production Department, 6903 Rockledge Drive, Bethesda, MD 20817) to provide guidance to workers handling the UF₆. The manual is based on years of experience by the workers who have been handling the material.

With respect to health effects from past operations, DOE has established an office to address worker compensation. Although worker compensation issues are outside the scope of this EIS, the following information is provided to help any individual locate appropriate resources. DOE has established the Office of Worker Advocacy to oversee workers' claims. Workers may submit an application for any illness that may have been caused by exposure to toxic substances, radiation, or biological agents while they were working at a covered DOE facility. Information about the program is available on the Web at <http://www.eh.doe.gov/advocacy/index.html>. Application forms may be downloaded from this Web site, or they can be requested by calling or visiting one of the DOE Resource Centers. Listing of the Resource Centers is also available from the above Web site. The telephone numbers of the resource center at Portsmouth are 740-353-6993, and Toll Free: 866-363-6993; at Paducah 270-534-0599, Toll Free: 866-534-0599; and at Oak Ridge 865-481-0411, Toll Free: 866-481-0411.

Comment D0001-002

My concern centers around the continued claim of upper management, distributed through middle management and on down the line to Front Line Managers who still tell employees that, "This is a clean plant. The dust out in the buildings is just DUST and there is nothing in it that will hurt you. Radiation is the only concern here and it is monitored. If there was any other danger, they would tell us about it."

I'm sorry, but that is an outright lie. DOE and its managing subcontractors have known for generations that the dust in Process Buildings, storage buildings and the ground surrounding

these buildings contains deadly elements such as Arsenic, Lead, Nickel, Silver and a long list of other deadly substances. Many of these elements are “laced” with secondary substances, such as Mercury, Zinc, Chromium and others, compounds that do not break down in the natural environment, pollution so intense that it is overwhelming.

What I don’t understand and remain confused about is the continued denial that these deadly elements, byproducts from the processing of nuclear material and the substances used in cleaning and maintaining the facilities, are the root cause of the cancers and other poisonings that both workers and other downwind victims suffer from.

Response D0001-002

DOE conducts a comprehensive monitoring program at both on-site and off-site locations measuring the ambient concentrations of radionuclides and hazardous substances in environmental media, including air, water, soil, building surfaces, vegetation and wildlife. Any occurrences of higher than acceptable concentrations are reported and appropriate actions are taken. All the findings from the monitoring program are documented in the annual site environmental reports. The most recent site environmental reports that were available at the time were used in the preparation of the Portsmouth and Paducah EISs. The environmental conditions at and around the Portsmouth, Paducah, and ETTP sites are summarized in Section 3 of the EISs.

With respect to health effects from past operations, see response to Comment D0001-001 above for information about the DOE Office of Worker Advocacy.

Comment D0001-003

DOE is long overdue to stop crying about potential “free-loaders” possibly getting compensation and using that excuse for not providing health care, nor paying the thousands of true victims the Congressionally appointed compensation they are supposed to be receiving. The claimed “lack of information” on applicants, lost employment and medical records is absolutely false. We, that worked in certain departments, know that the DOE and the subcontractors have stacks of records and computer files on every employee and individual that ever entered the plant.

I have personally seen files up to a quarter-inch thick, just on a “delivery person”. On employees, with the security background checks, interviews, updates and annual physical exams, each employee has a mountain of historical records. DOE, for some reason, wants to slow the process down, thus allowing more victims to die in despair, never knowing if they could have been saved by alternative medical treatments, nor if their families received any compensation for the pain, severe loss of income and suffering.

Response D0001-003

Comment noted. See the response to Comment D0001-001 above for information about the DOE Office of Worker Advocacy.

Comment D0001-004

There are thousands of innocent victims all across this nation that are being systematically ignored and allowed to suffer needlessly. I implore you to take caution as you explore the methods of safe handling of these Depleted Radioactive Elements, the containers they are stored in, and remember that the byproducts, the dust and cleaning agents can be as deadly as the DU itself.

Response D0001-004

The conversion facility project will be conducted with a commitment to keeping workers, the public, and the environment safe. First, all applicable health and safety regulations will be complied with; this results in keeping worker exposures to radiation, chemicals, and physical hazards at low levels. Wherever possible, reactions in the conversion process will be automated and contained within closed vessels so that workers are not exposed (this will particularly limit exposures to dusts). Workers with the possibility of contacting radioactive materials will wear radiation dosimeters so that individual exposures can be monitored and controlled to remain at low, health-protective levels.

The EISs include detailed evaluations of the potential impacts to human health and safety, including workers directly involved in conversion facility operations, other workers located at the sites, as well as members of the public living around the sites. The EISs consider exposures to not only depleted uranium compounds but also to other chemicals used in the conversion process and by-products of conversion. In the Paducah EIS, potential health and safety impacts during operations are discussed in Sections 5.2.2.1 and 5.2.2.2 for routine conditions and accidents, respectively. In the Portsmouth EIS, potential health and safety impacts during operations are discussed in Sections 5.2.3.1 and 5.2.3.2 for routine conditions and accidents, respectively. The results of the analyses indicate that the risks to human health and safety are expected to be low and well within applicable limits and regulations.

COMMENTOR D0002: John Kilrod**Comment D0002-001**

I understand that there is a public meeting and public comments on the UF₆ cylinder project (and that is the transferring of UF₆ cylinders from K25 to Portsmouth or Paducah). I understand that Bechtel-Jacobs has offered up a barge remedy to barge those cylinders from K25 to Paducah and/or Portsmouth or vice versa. The one thing that concerns me is if you load barges at K25 facilities or any facilities upstream of Kingston, you will have to do some dredging to do that. If that dredging interferes or some way mucks up the residues in the bottom of the Clinch River in which there is known contaminants and it reaches the water tables and water systems in Kingston and downstream users, how is the Department of Energy prepared to reimburse or give us clean water?

This has been thought of before and has been tried before. And I think the only thing that Bechtel-Jacobs wants is a quick fix under Incentive C, not looking out for downstream users and downstream people. 1) So one of the things that I'd like to see is some definitive data, not comments or professional judgments, definitive data, that there is no residue disturbance that will occur in a barge transfer. 2) Even if there is no dredging needed, wouldn't that disturb the sediment in the water and wouldn't that make it intrusive into the downstream users' water table? 3) I would like to know what happens if a cylinder falls off the barge, and 4) How would you remediate that? 5) How are going to protect it and provide adequate security down through the Tennessee River into Alabama and back up through Tennessee and Kentucky? I'd like answers to those questions before I would be willing to support any kind of action that Bechtel-Jacobs would suggest. I assume they have a conflict of interest because they are going to propose the least cost alternative in order to maximize their incentive fee under incentive contract. I would like to know about this and DOE's views.

Response D0002-001

The transportation of cylinders by barge was considered, but not analyzed in detail in the two site-specific conversion draft EISs. As discussed in Section 2.3.5 of each EIS, barge transport was not considered in detail primarily because the nearest functioning barge facilities to Portsmouth and Paducah are located between 20 and 30 miles from the sites. Consequently, overland transportation would be required at each end of the route, as would additional cylinder loading and unloading steps. In addition, truck and rail were identified as the likely cylinder transport modes in conversion facility design documents.

As with any transportation mode, barge transport has associated advantages and disadvantages. For example, during barge transport there is no onboard fuel available and the shipment is not in close proximity to other transport vehicles, factors which could reduce, but not eliminate, potential accident risks. However, barge transport would require overland transportation by truck on each end of the route, as well as additional handling of cylinders during the loading and unloading of the barge. These activities have associated accident risks and would contribute to the radiation exposure of workers during normal cylinder handling. In addition, shipment by barge could require dredging

of the river bottoms at the barge facilities, an activity with potential adverse environmental impacts, as noted by the commentor.

It should be noted that, regardless of the transport mode, all cylinder shipments must comply with the U.S. Department of Transportation (DOT) regulations for the shipment of radioactive materials, as specified in Title 49 of the *Code of Federal Regulations*. These regulations are designed to be protective of public health and safety during both accident and routine transportation conditions.

Because barge transport was considered to be an unreasonable option and has not been proposed as part of the current conversion facility project, a detailed evaluation has not been included in the Final site-specific conversion EISs. If barge transportation was proposed in the future, additional NEPA review would be conducted. Such a review would address all issues associated with the proposed activity, including issues associated with dredging, accidents, and security.

COMMENTOR D0003: **Vina Colley, President**
 Portsmouth/Piketon Residents for Environmental Safety
 and Security

D0003-001

We feel that the oxide conversion facility was here from '57 to '78 and it was one of most hazardous radiological chemical operations at Portsmouth. There were high levels of transuranium problems there, and the report explains that the oxide conversion process was originally established as a waste recovery process. We feel that the depleted uranium hexafluoride plant is another process in establishing waste. It will put workers and the community at risk.

Response D0003-001

The oxide conversion facility that operated from 1957 to 1978 at the Portsmouth site to which the commentor has referred was a different type of a conversion facility than the one being considered in this EIS. The earlier facility was used to convert UO₃ to UF₆, which was later fed into the gaseous diffusion plant at the site to be enriched and used. Some of the UO₃ was derived from the reprocessing of used nuclear fuel and contained transuranic elements. In 2000, the DOE Office of Oversight, within the Office of Environment, Safety and Health conducted an investigation into the activities that took place at the Portsmouth site prior to 2000, and documented its findings in a report entitled "Independent Investigation of the Portsmouth Gaseous Diffusion Plant, Volume 1: Past Environment, Safety, and Health Practices" (DOE 2000). The conversion facility referenced by the commentor as well as the conditions under which the facility operated and potential impacts to the workers at the facility are described in Section 3.2.2 of that report.

The conversion facility that is discussed in this EIS is intended to convert the depleted uranium hexafluoride (DUF₆) contained in the cylinders to depleted U₃O₈. Under the proposed action, the depleted U₃O₈ product would subsequently be packaged and transported to a disposal facility off site and disposed of there. The amount of product in temporary storage on site at any one time would not exceed the quantity generated over a six-month period. The conversion facility would be constructed and operated under strict guidelines and would be protective of the workers, residents who live in the vicinity of the site, and the environment.

Impacts associated with potential transuranic contamination of DUF₆ cylinders at the three storage sites are discussed in detail in Appendix B of both the Portsmouth and Paducah EISs. The impacts are also summarized in Sections 5.1.2.1, 5.2.3.1, and 5.2.3.2 of the Portsmouth EIS, and Sections 5.1.2.1, 5.2.2.1, and 5.2.2.2 of the Paducah EIS. As indicated in those sections, the impacts associated with transuranic contamination of cylinders are relatively small compared with the impacts associated with the DUF₆ stored in the same cylinders. Impacts associated with activities other than DUF₆ management are addressed under the cumulative impacts discussion in Section 5.3 of both EISs.

Comment D0003-002

Mounting evidence of health effects of the depleted uranium on humans and the environment is showing up in the Gulf War, and now lawsuits have started. So this is going to be another big issue here if we have this conversion plant.

Response D0003-002

To the extent that the commentor is concerned about the health effects of depleted uranium, the EISs include detailed evaluations of the potential impacts to human health and safety, including workers directly involved in conversion facility operations, other workers located at the sites, as well as members of the public living around the sites. The EISs consider exposures to depleted uranium compounds as well as other chemicals used in the conversion process and by-products of conversion. The most recently available toxicological data from established regulatory sources were used in the evaluations. In the Paducah EIS, potential health and safety impacts during operations are discussed in Sections 5.2.2.1 and 5.2.2.2 for routine conditions and accidents, respectively. In the Portsmouth EIS, potential health and safety impacts during operations are discussed in Sections 5.2.3.1 and 5.2.3.2 for routine conditions and accidents, respectively. The results of the analyses indicate that the risks to human health and safety are expected to be low and well within applicable limits and regulations.

The conversion facility project will be conducted with a commitment to keeping workers, the public, and the environment safe. All applicable health and safety regulations will be complied with, keeping worker exposures to radiation, chemicals, and physical hazards at low levels. Wherever possible, reactions in the conversion process will be automated and contained within closed vessels so that workers will not be exposed (this will particularly limit exposures to dusts). Workers with the possibility of contacting radioactive materials

will wear radiation dosimeters so that individual exposures can be monitored and controlled to remain at low, health-protective levels.

Comment D0003-003

In 1997 the National Institution of Occupational Safety and Health, NIOSH, evaluated the cylinder yard and they found that there was neutron exposures there. They concluded that there was potential and chronic neutron exposures in the area where uranium was stored, and the cylinder yard was just one of the areas that neutron exposures occurred.

Response D0003-003

As described in Section 1.2 of each site-specific conversion facility EIS, uranium and its decay products in DUF₆ emit low levels of alpha, beta, gamma, and neutron radiation. The average external dose rate at the outside surface of the cylinders, based on actual measurements in the cylinder yards, is typically about 2 to 3 mrem per hour (about 1 mrem/h at 1 ft). Estimates of radiation exposures resulting from cylinder handling and transportation activities were made either on the basis of external radiation measurement data or computer modeling results, which are in good agreement with measurement data. Most of the exposure is due to gamma radiation. Beta and neutron radiation contribute significantly less to worker exposures and diminish quickly as one moves away from the cylinder. The contribution of alphas to exposure is essentially zero. Potential lifetime latent cancer risks resulting from radiation exposures are presented in Section 5.1.2.1.1 of each EIS for maintenance activities needed for continued cylinder storage (the no action alternative).

Comment D0003-004

Documents indicated that there's various slips associated with the valves on the HF cylinders deactivation and the coupling welds. So we're concerned that this could be a huge problem when they start moving these cylinders around. We've also been told that they really don't have any expertise that knows how to get these cylinders moved from place to place.

Response D0003-004

The Paducah, Portsmouth, and ETTP sites have extensive experience with moving the cylinders, and excellent safety records for those cylinder movements. Since the mid-1990s, most of the cylinders at the sites have been safely moved to achieve readily monitored locations on well-drained yards.

The valves of each cylinder are inspected for signs of leakage during the scheduled inspection of each cylinder (either once every 4 years or once every year for those cylinders previously stored in substandard conditions or showing areas of heavy pitting or corrosion). If discoloration is noted around a valve, radiological monitoring of the cylinder surface is conducted to determine whether leakage has occurred. If necessary,

leaking valves are replaced. These procedures are discussed in Section 5.1.1.1 of each of the EISs.

A 2003 Agreed Order between the Commonwealth of Kentucky and DOE stipulates that a detailed inspection procedure be followed prior to cylinder relocations within the Paducah site; the Portsmouth site follows similar procedures. Prior to movement or feeding into the conversion facility autoclaves, the cylinders would be visually inspected to ensure that no damage had occurred since the last scheduled inspection. No cylinder would be moved or fed into the process unless there was a high degree of confidence in its ability to withstand the handling.

Comment D0003-005

In 1992 there was a valve that was knocked off of one of these cylinders in the yard and there was an airborne plume that left the site. The workers were told to stay in the building, and I monitored it on my own radio at home but no one in the community was even notified. At no time have we ever had a release in this community that the alarm went off to warn the community.

Response D0003-005

All past release incidents at the three DUF₆ storage sites are reported as required under law. If the releases are small and do not reach off-site locations at health-threatening levels, immediate public notification in the form of alarms is not required. However, if an emergency situation were ever to develop that threatened the off-site population near any of these sites, immediate activation of the emergency response system, including alarms, would be implemented. Additionally, emergency procedures and training are provided for site employees in the event of accidental releases of DUF₆.

Comment D0003-006

We lack stakeholder involvement here. At Piketon they made a mockery of the real public involvement. I'm a stakeholder, and I've not been invited to one stakeholder meeting for probably a couple years.

Response D0003-006

Public and stakeholder involvement has been an important component of the DOE Depleted Uranium Hexafluoride Management Program's National Environmental Policy Act activities. For example, during preparation of the *Programmatic EIS (PEIS) for Alternative Strategies for the Long-Term Management and Use of Depleted Uranium Hexafluoride* (DOE 1999), stakeholders were invited to participate in public scoping meetings held near Portsmouth, Ohio, Paducah, Kentucky, and Oak Ridge, Tennessee, in February 1996 to solicit input into the PEIS process. Public hearings on the draft PEIS were held at the same sites in February and March of 1998. Similarly, during preparation of the two site-specific conversion facility EISs, public scoping meetings were held near

the three storage sites in November and December 2001, and public hearings on the draft EISs were held in January 2004. Alternative means of stakeholder involvement were also provided, such as toll free telephone and fax lines, e-mail addresses, and a program Web site. In all cases, the public was invited and encouraged to provide input into the process and all comments were considered in preparation of the final EISs.

Comment D0003-007

I know that they're going to keep accumulating more and more waste. We had a Russian scientist that came here and we did soil samples off-site, and some of the community residents want their land and water and things cleaned up. We found radiation levels a hundred times the background level and we sent some of these samples to Russia to get them analyzed further.

There's a foam that's coming down through Mr. West's property where his cows are grazing and drinking out of these creeks and the foam has little brown particles that has radiation and uranium in it.

Response D0003-007

Cylinders containing depleted UF₆ are no longer accumulating at the Portsmouth or ETTP sites, where the gaseous diffusion plants have ceased operations. The DUF₆ cylinders that are being generated at the Paducah site from operation of USEC's gaseous diffusion plant are subject to regulation by federal and state agencies and are being stored in a safe manner.

There are no plans for the long-term storage of conversion products at the Portsmouth or Paducah conversion facilities. As discussed in each site-specific EIS, all wastes generated under the proposed action would be stored, treated, and disposed of in accordance with all applicable regulations, as appropriate. The depleted uranium conversion product, emptied cylinders, and radioactively contaminated waste will be disposed of in off-site low-level waste disposal facilities, such as Envirocare of Utah and the Nevada Test Site. DOE plans to decide the specific disposal location(s) for the depleted U₃O₈ conversion product after additional appropriate NEPA review. Accordingly, DOE will continue to evaluate its disposal options and will consider any further information or comments relevant to that decision. DOE will give a minimum 45-day notice before making the specific disposal decision and will provide any supplemental NEPA analysis for public review and comment.

The DOE has conducted soil and water sampling at on-site and off-site locations. Results of these sampling efforts are summarized in Sections 3.1.4 and 3.1.5 of the Portsmouth EIS. When soil contamination has been identified, it has been addressed and has been or will be remediated under site remediation programs. DOE is not aware of any significantly elevated levels of contamination at any off-site locations associated with these facilities (i.e., levels that could cause elevated risks of adverse health impacts).

Comment D0003-008

We scored – double scored the superfund list here at this site, and we’re asking that we do an environmental impact statement on the property and the air and the releases and the community health that’s been affected from here.

Response D0003-008

The Portsmouth site is not listed on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priorities List (i.e., the Superfund list). Investigation and cleanup of hazardous substances and hazardous wastes that have been released to air, surface water, groundwater, soils, and solid waste management units as a result of past operational activities at the Portsmouth site are being conducted under the provisions of the various edicts that have been issued pursuant to Resource Conservation and Recovery Act (RCRA), CERCLA, and/or Ohio state law.

It appears that the commentor is requesting a sitewide EIS for the Portsmouth site. If so, the issue of the need for a sitewide EIS for the Portsmouth site is beyond the scope of this EIS. However, it is worth noting that Section 5.3 of the EIS discusses the cumulative impacts at the site, which include the impacts on the environment resulting from incremental impacts of the proposed action when added to other past, present, and reasonably foreseeable future actions. As discussed in Section 5.3.2, other activities considered at the Portsmouth site include all major activities that are currently occurring or projected to occur at the site. For example, the proposed construction of a new uranium enrichment facility by USEC is included in the analysis.

In addition, both the Portsmouth and the Paducah conversion facility EISs include detailed evaluations of the potential impacts to human health and safety, including workers directly involved in the operation of a conversion facility, other workers located at the sites, as well as members of the public living around the sites. The EISs consider exposures to depleted uranium compounds as well as other chemicals used in the conversion process and by-products of conversion. In the Portsmouth EIS, potential health and safety impacts during operations are discussed in Sections 5.2.3.1 and 5.2.3.2 for routine conditions and accidents, respectively. In the Paducah EIS, potential health and safety impacts during operations are discussed in Sections 5.2.2.1 and 5.2.2.2 for routine conditions and accidents, respectively. The results of the analyses indicate that the risks to human health and safety are expected to be low and well within applicable limits and regulations.

Comment D0003-009

And I looked in the book and it says something about mines underground where they might think about doing some storage of this waste and we’re concerned about that.

Response D0003-009

The potential use of mines for storage or disposal of depleted uranium conversion products is mentioned in the two site-specific conversion EISs, but only in relation to alternatives that were considered in the *Programmatic EIS for Alternative Strategies for the Long-Term Management and Use of Depleted Uranium Hexafluoride* (DOE 1999). The use of mines for storage or disposal of depleted uranium conversion products is not considered in the two site-specific conversion facility EISs. Also see response to Comment D0003-007.

Comment D0003-010

We're also concerned about maybe burning this – heating up these cylinders again because, like I said, in 1979 we lost a cylinder here and we lost 24,000 pounds of uranium hexafluoride to the air, to the creeks, and to this day there's never been an impact statement on the health effects of this cylinder. And according to the lawsuit and the community residents, it's been compared to Three Mile Island.

Response D0003-010

On March 7, 1978, there was an incident that resulted in a liquid uranium hexafluoride release at the Portsmouth Gaseous Diffusion Plant. At approximately 4:36 p.m., in the X-745B cylinder storage lot, a 14-ton cylinder with 5/16 in. wall thickness, containing liquid natural uranium hexafluoride, was dropped 8 to 10 in. and ruptured. The result was the release of 21,125 lb (9,600 kg) of feed material in less than 5 minutes. Emergency notifications and responses were rapid; there were no injuries to personnel or the off-site public, and all exposures to radioactive materials were within allowable DOE limits.

Precipitation in the form of snow, coupled with cold temperatures, minimized the off-site impact. There was a reported fish kill as a result of runoff from the incident area caused by treating the runoff with lime and causing a pH change in the water. This lime treatment aided in the prevention of off-site uranium contamination.

A Public Health Assessment for the Portsmouth Gaseous Diffusion Plant site was conducted by the Agency for Toxic Substances and Disease Registry (ATSDR), a federal government agency that is separate from and independent of DOE, in November 1996. As part of the Public Health Assessment, ATSDR evaluated the records associated with the accident described above and concluded, "There was no measurable off-site release from the UF₆ cylinder rupture that took place on March 7, 1978. ATSDR received the incident report for the accident and all sample documentation. ATSDR staff have determined that not enough material could have reached off-site areas to cause adverse health effects." (See ATSDR 1996, Section on Environmental Contamination and Other Hazards, and Subsection on Off-site Contamination)

To prevent such an accident from reoccurring, several steps were taken, including modifications of cylinder handling equipment and eliminating the transport of uranium hexafluoride in the liquid state.

The DUF₆ currently stored in the cylinders in yards is in solid state. When the cylinders are emptied into the conversion plant, the DUF₆ in them will be transformed into gas by sublimation (i.e., changing a solid directly to a gas) without going through the liquid state in an autoclave (a completely enclosed structure). Therefore, the chance of occurrence of the type of accident that took place on March 7, 1978, at the conversion facility is essentially nonexistent.

Comment D0003-011

I want to remind you we do have – that there is a citizen lawsuit that's tied up in court. I didn't see it anywhere in that book.

Response D0003-011

DOE assumes that this comment refers to a lawsuit filed in 1990 against several DOE contractors at the Portsmouth site. This lawsuit, which was certified as a class action in 1991, remains pending, awaiting a final opinion from the judge. The future course of the litigation will be determined by the final opinion, which is not expected to influence DOE's decision regarding whether to construct and operate a depleted UF₆ conversion facility at the Portsmouth site.

Comment D0003-012

We would like to know how much authority does the E.P.A. really have because if they don't have authority on transportation problems and releases from this plant, then who does have?

Response D0003-012

In general, the U.S. Environmental Protection Agency (EPA) does not directly regulate radiation protection of the public and environment during construction and operation of individual nuclear facilities. Rather, in the case of DOE-owned facilities that support the U.S. nuclear weapons complex, such as the existing depleted UF₆ storage yards and the proposed depleted UF₆ conversion facilities, the EPA develops radiation protection standards that DOE is required to implement. DOE does this through conditions incorporated into the construction and operating contracts for these facilities. The DOE Office of Independent Oversight and Performance Assurance provides oversight of compliance with these contractual conditions. The EPA also sets concentration criteria applicable to releases of certain types of radioactive material into the air or into current or potential sources of drinking water from nuclear facilities during normal operation. These criteria are enforced through permits issued by the State.

Transportation of radioactive materials, including depleted UF₆, is regulated by the DOT.

COMMENTOR D0004: Linda Howell

Comment D0004-001

In 1995, the Defense Nuclear Safety Board gave three recommendations on the cylinders, and the first one was that the coating be renewed, the second one was that there be steps taken to protect the cylinders from the elements, and the third was a study be conducted on more suitable chemical form for storage. My question is: Have these things been done?

Response D0004-001

The DOE met all commitments made in response to the Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 95-1, including the three mentioned by the commentor. The DNFSB closed Recommendation 95-1 in December 1999. Text from the letter from DNFSB Chairman John T. Conway to DOE Secretary Richardson (Conway 1999) closing Recommendation 95-1 is copied below:

“...The Board believes the Department of Energy (DOE) has met all of the commitments in the Implementation Plan for Recommendation 95-1 and considers the recommendation closed.

The Board is particularly impressed by DOE’s use of the systems engineering process to develop a workable and technically justifiable cylinder management program that is now being used to govern the maintenance and surveillance of the cylinders. Although concerned that funding was not available for painting of cylinders during 1999, the Board is pleased that DOE has committed to continuing implementation of the cylinder management program as part of its accelerated conversion program.”

Comment D0004-002

Another page in the EIS stated that there have been 11 breaches or holes in the cylinders and nine of those were caused from mishandling. Again, that shows lack of expertise in training the workers to handle the cylinders. Only two were caused from corrosion.

Response D0004-002

The EISs discuss past cylinder breaches at the sites in Sections 2.1 and 5.1.1.2. The text states that most of the breaches were determined to be caused by mechanical damage during stacking, and that the damage was not noticed immediately and subsequent corrosion occurred at the point of damage, eventually leading to a breach. DOE believes that the handling that caused the damage to the cylinder surfaces was most likely done in the early years of cylinder generation, prior to DOE’s current extensive cylinder management program. Now that the long-term negative results of such handling damage are known, greater care is taken during cylinder movements that such damage does not occur.

The Paducah, Portsmouth, and ETTP sites now have extensive experience with moving the cylinders, and excellent safety records for those cylinder movements. Since the mid-1990s, most of the cylinders at the sites have been successfully moved to readily monitored locations on well-drained yards.

Comment D0004-003

Again, from the EIS, another question says that many of the containers no longer meet DOT requirements for physical – for transportation because of the physical deterioration or because documentation has been lost and some might also violate more than one requirement of DOT.

Response D0004-003

As stated in Section 2.2.4 of both EISs, at this time it is unknown exactly how many of the DUF₆ cylinders at ETTP do not meet DOT transportation requirements. The DUF₆ programmatic EIS (DOE 1999) assessment for cylinder preparation for shipment evaluated from half to all of the DUF₆ cylinders at ETTP not meeting DOT shipping requirements, but this was an assumption made for the purposes of analysis. Prior to shipment of any cylinder from ETTP, the cylinder would receive a thorough inspection, including a record review to determine if the cylinder is overfilled, a visual inspection for damage or defects, a pressure check to determine if the cylinder is overpressurized, and an ultrasonic wall thickness measurement (if necessary based on the visual inspection).

The two site-specific conversion EISs identify three possible options for shipping cylinders that do not comply with DOT requirements for the shipment of UF₆: (1) transferring the contents to compliant cylinders (likely requiring a new facility); (2) obtaining an exemption from DOT to ship the cylinders “as is,” provided that DOE can demonstrate a level of safety that would be at least equal to the level required by the regulations; and (3) transporting the cylinders in a protective overpack. At present, a transportation plan for shipment of noncompliant cylinders has not been finalized and DOE is evaluating the available options. Consequently, the EISs provide an evaluation of these options.

It should be noted that all shipments must be made in compliance with DOT regulations, regardless of the specific approach selected. A Transportation Plan will be developed for each shipping program related to the DUF₆ conversion facility program. Each Plan is developed to address specific issues associated with the commodity being shipped, the origin and destination points, and concerns of jurisdictions transited by the shipments. In all cases, DOE-sponsored shipments will comply with all applicable state and federal regulations and will be reflected in many of the operational decisions to be made and presented in the Plan.

Comment D0004-004

And it said that some of the breaches could go undetected for up to four years because that’s the period between planned inspections and, you know, I’m not real familiar with nuclear handling

requirements and so forth, but just as a person using their common sense, one would think that four years between inspections shows a lack of responsibility.

Response D0004-004

The 4-year inspection interval implemented under the three site's cylinder management program has been shown to be a cost-effective time frame during the 9 years since this schedule was established. The initial cylinder yard improvements and relocations of cylinders as necessary that occurred prior to 1999 led to the identification of eight cylinder breaches (see discussion in Section 5.1.1.2 of each EIS). Since that time, only three additional cylinder breaches have been identified, and none of these were cylinders with advanced deterioration or that involved significant releases of UF₆ to the environment. This indicates that the inspection schedule is effective in identifying new cylinder breaches before they have progressed to result in significant environmental releases.

The text of Section 5.1.1.2 of each EIS states "For all hypothetical cylinder breaches, it was assumed that the breach would go undetected for 4 years, which is the period between planned inspections for most of the cylinders. In practice, cylinders that show evidence of damage or heavy external corrosion are inspected annually, so it is very unlikely that a breach would go undetected for a 4-year period."

Although it is very unlikely that a breach could go undetected for 4 years, the purpose of the EIS analyses was to estimate the upper bound environmental impacts of continued cylinder storage. Therefore, a long time was assumed for detecting cylinder breaches, further leading to a bounding (high) assumption for the amount of DUF₆ released from the breached cylinder.

Comment D0004-005

And again one further question: If the requirements and the criteria that they're supposed to be meeting have not been done to this point, how can the public be assured that those plans that are being made for the facility now will be carried out to specification?

Response D0004-005

Soon after the DNFSB, an independent DOE oversight organization within the Executive Branch, issued Recommendation 95-1 in May 1995, DOE instituted a comprehensive systems engineering approach for the management of its DUF₆ inventory. This approach was used to relocate most of the cylinders at the sites and has achieved safe, monitored storage conditions for the three-site cylinder inventory. The DOE met all commitments made in response to DNFSB Recommendation 95-1, as discussed in the response to Comment D0004-001.

DOE is committed to continue to manage its inventory of DUF₆ cylinders with the same level of rigor and safety throughout the period they remain in storage until conversion

takes place. UDS, the conversion contractor that DOE has selected, has safely operated a similar conversion plant in Richland, Washington, for a number of years. UDS will use and build on this experience to operate the conversion facilities in a manner that will protect the employees, the general public, and the environment of the sites, and that will follow all applicable regulations.

COMMENTOR D0005: **Dan Minter, Vice Chairman**
Southern Ohio Diversification Initiative, and Paper,
Allied-Industrial, Chemical and Energy International Union

Comment D0005-001

Regarding the conversion activity, when you consider the options of these cylinders sitting and having no activity, decaying, and the environmental insult that they potentially might cause, there was a reference to how many breaches there may have been, those would continue with the surveillance and maintenance process.

Response D0005-001

Both EISs consider the no action alternative, which assumes continued storage of the cylinders at their present locations. As part of the no action alternative assessment, two estimates of the number of cylinder breaches that might occur in the future were made; one based on the number of breaches that have occurred to date, and the second on estimated corrosion rates for cylinders that previously were kept in poor storage conditions (e.g., in ground contact, or with debris left in skirted ends). Estimates of the impacts associated with these hypothetical cylinder breaches are given in Section 5.1.2 of each document, which discusses the no action alternative. However, these estimates were made to bound the potential impact of cylinder breaches. To minimize actual impacts during continued storage of the cylinders or during storage while awaiting conversion, the DOE is committed to cylinder maintenance and inspection such that few, if any, additional breaches should occur. Any breaches that do occur will be remediated quickly to limit impacts.

Comment D0005-002

Ultimately the final dispossession of these materials from this site and the conversion process would be the best end state and removing this material once and for all from the site certainly is in the best interest. It must be done in a safe manner both for the workforce, the public, the safety and health of the community as well as the environment at the site. That is clearly something that has to be done.

Response D0005-002

DOE is committed to accomplishing the conversion and disposition of its depleted uranium hexafluoride inventory in a manner protective of the workforce, the public, and the environment.

COMMENTOR D0006: **T.J. Justice**
Ohio Governor's Office

Comment D0006-001

I have no specific comments on the EIS. Those are, I believe, the responsibility of the Ohio E.P.A. as well as possibly the Ohio Department of Health. But I did want to enter as a matter of record our support for both DUF₆ facilities.

We have worked very hard with the administration in Washington to secure funding for the construction of these facilities, as Dan said, to responsibly dispose of the material in question here as well as look at the tremendous economic impact it's going to have with regard to job creation.

I just want the record to reflect, as is evidenced by many letters which have been sent to the department of the administration, our support for the project, and I believe there will be a separate submission coming from the Ohio E.P.A. relative to the specific EIS.

Response D0006-001

Comment noted.

COMMENTOR D0007: **Danny Orazine**

Comment D0007-001

...the local civic leaders and elected leaders here have long worked with DOE and our other elected representatives in Washington – Senators McConnell and Bunning and Representative Whitfield – on this project. And we very much view this as a positive project for our community, and we'd very much like to see and hope that you can stick to the schedule that you showed on the board, and construction starts in July of '04.

Response D0007-001

Comment noted.

Comment D0007-002

We view this as good for the community in a couple of ways. It's going to clean up the environment, but we also look at the economic impact of building the plant and the jobs that will operate the DUF₆ plant.

I'm not going to belabor this. I don't need five minutes. But we, the elected people and what people we speak for in this county and also the region, very much would like to see this project happen.

Response D0007-002

Comment noted.

COMMENTOR D0008: **Vickie Jurka**
Active Citizens for Truth

Comment D0008-001

It is my opinion that this Draft Environmental Impact Statement does not adequately address the health effects on an already exposed population, those living closest to the plant. This is of special concern, because expected emissions are known to target the lungs and kidneys, what was already of concern to this community.

Response D0008-001

The EISs include detailed evaluations of the potential impacts to human health and safety, including workers directly involved in conversion facility operations, other workers located at the sites, as well as members of the public living around the sites. The EISs consider exposures to depleted uranium compounds as well as other chemicals used in the conversion process and by-products of conversion. The potential for lung damage and kidney damage are among the health effects looked at when assessing the risks of uranium and hydrogen fluoride exposures (see Section 4.3.3 of the EISs for a discussion of the methods used to estimate impacts from both chronic exposures and from short-term, high-level accidental exposures).

In the Paducah EIS, potential health and safety impacts during operations are discussed in Sections 5.2.2.1 and 5.2.2.2 for routine conditions and accidents, respectively. In the Portsmouth EIS, potential health and safety impacts during operations are discussed in Sections 5.2.3.1 and 5.2.3.2 for routine conditions and accidents, respectively. The results of the analyses indicate that the risks to human health and safety are expected to be low and well within applicable limits and regulations.

The impacts from past activities at the site are considered in the cumulative impacts analyses that are discussed in Section 5.3 of both the Paducah conversion facility EIS and the Portsmouth conversion facility EIS. As described in Section 5.3, cumulative effects are defined as the impacts on the environment (including human health) resulting from the incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7). Therefore, the activities considered in the cumulative analysis in each conversion facility EIS include those that might affect environmental conditions at or near the sites, including those that occurred in the past. The results of the cumulative impacts analyses indicate that the risks to human health and safety are expected to be low and well within applicable limits and regulations.

Comment D0008-002

I would like to say that I'm not opposed to the conversion process, but I do think that the community this time needs to be taken into account.

Response D0008-002

Impacts on the community are considered in both EISs for the conversion facilities. The potential for adverse health effects from the conversion facilities and for the no action alternative are summarized in Sections 2.4.2.1 (Human Health and Safety, Construction and Normal Facility Operations), 2.4.2.2 (Human Health and Safety, Facility Accidents), and in 2.4.2.3 (Human Health and Safety–Transportation). These summaries address health impacts for the residents in the off-site populations surrounding the site, as well as for workers on the sites. Section 2.4.2.6 (Socioeconomics) also summarizes economic impacts in the communities around the sites. Details of these analyses are provided in Chapter 5 of each EIS. The results of the analyses indicate that under all alternatives, the risks to human health and safety are expected to be low and well within applicable limits and regulations. The increased cancer risks associated with the no action alternative are slightly higher than those associated with the proposed action alternatives. For socioeconomics, the impacts tend to be positive; the conversion facilities will create jobs and income with only minor impacts on housing, public finances, and employment in local public services.

The preferences and opinion of the community are also taken into account through the public participation process. The public scoping process for the EISs is described in Section 1.6.1 of each EIS, and all comments received from the public during the public comment period on the draft EISs have been considered in the preparation of the Final EISs.

COMMENTOR D0009: Mark Donham

Comment D0009-001

I just have a few questions I want to put on the record. I know they won't get answered tonight, but they can possibly be addressed through the response to comments.

One has to do with the marketing of the hydrogen fluoride. And it gives a figure in the EIS for the demand, the national demand for this particular product, aqueous hydrogen fluoride. And it says that there's another plant in, I believe, Geismar – is that Louisiana? – that produces the same product, but it doesn't – it gives a total amount of hydrogen fluoride that it produces, but it doesn't divide it up into the two different kinds.

And then it talks about importing hydrogen fluoride from Mexico, but it never does say exactly how much that Louisiana plant produces. And it leaves this whole question about demand and whether something – whether this product can actually be sold or not. And that's a huge – that's a huge gap in knowing what's really going to happen.

Response D0009-001

Demand for HF in the United States in 2002 stood at 330,000 tons, of which only about 9% (29,000 tons) was for aqueous HF. Section E.3.1 of the EIS provides more information on the U.S. market for HF and U.S. HF production. At the time the EIS was prepared, there were two plants in the United States capable of producing HF, one in La Porte, Texas, and one in Geismar, Louisiana, with all production of HF coming from the Geismar plant at that time. As U.S. HF production is limited to a single plant, the total quantity of aqueous HF produced and the quantities of the various HF acid concentrations are proprietary.

The maximum amount of HF that could be produced annually by the two facilities combined would be about 6,000 metric tons of 70% solution and 13,500 metric tons of 49% solution (from Table E-2 in the EISs). The amount of HF and CaF₂ produced by the two conversion facilities that might be sold cannot be predicted. The EIS is therefore limited to identifying general market areas for HF and CaF₂. The impact of the sale and use of HF and CaF₂ are presented in Sections E.6.1 and E.6.2 in the EIS.

Comment D0009-002

– there was one paragraph in here about transuranics – if I can find the section here –that I made some notes on. Okay. It says: The transuranic contaminants that are dispersed throughout the depleted uranium hexafluoride might be entrained in the gaseous DUF₆ during the cylinder emptying operation and carried out of the cylinders. These contaminants could be captured in filters between the cylinders and the conversion units.

And then it says: These filters would be monitored and changed out periodically to prevent buildup of transuranics. They would be disposed of as low-level waste.

Well, that seems inconsistent, because if you're going to be capturing all the transuranics, and they're going to be concentrated in a certain place, why would that be that low-level waste then?

Response D0009-002

By definition, the transuranic waste contains greater than 100 nanocuries per gram of transuranic radionuclides with half-lives of more than 20 years (see Glossary, Chapter 9 in the EIS). If the concentration of the transuranics is less than that, the waste is not transuranic waste. The filters will be monitored and replaced before the transuranic concentration reaches 100 nanocuries per gram. Therefore, the filters will be classified as low-level radioactive waste and will be disposed of as such.

Comment D0009-003

And also, I don't like this, "... might be entrained in the gaseous DUF₆ ..." "... could be captured in filters," that's not the kind of language that I like to hear when I'm talking about – when you're talking about pollution controls.

There's also some assumptions, such as it says: It is also expected that the nonvolatile forms of technetium that exist in the cylinders would remain in the heels -- or be captured in the filters.

And then it goes on, but there's no citations. There's no references to any studies. You've got a bibliography that gives your references, but it's extremely hard to pin what reference comes from what place, because there doesn't seem to be a citation after the particular sentences.

Response D0009-003

The discussion provided in Section B.4 of both the Paducah and Portsmouth DUF₆ Conversion Facility EISs regarding the behavior of potential transuranic and technetium contaminants in some cylinders is abstracted primarily from two references listed at the end of Appendix B, namely Brumburgh et al. (2000) and Hightower et al. (2000). To clarify this point, these references have been inserted into the section. The discussion given in this section regarding the fate of these contaminants is based on a series of experimental and field work described in these two references as well as the understanding and opinion of the experts in the field of transuranic element chemistry. However, because of the scarcity of data and the lack of complete understanding of the chemistry and level of contamination in the cylinders, the discussion is presented qualitatively in terms of the expected behavior of the contaminants under the conditions that would be encountered during the conversion process. However, to overcome this uncertainty, the analyses and results presented in Sections B.5 and B.6 of Appendix B are based on conservative assumptions, that is, assumptions are made in such a way that the results obtained are overestimates of the impacts that would actually be encountered in the proposed conversion facility.

Comment D0009-004

And also, you know, I've got an ongoing concern about a cumulative impact analysis, similar to the previous commentor, that NEPA requires a cumulative impact look of past, present, and reasonably foreseeable future action. And that would include everything that's been going on in the past and the things that you think in the future, which would be all of the cleanup activities that you would expect, all the decontamination. And I've never seen all of that in one document as far as cumulative impact.

Response D0009-004

Cumulative impacts are discussed in Section 5.3 of both the Paducah conversion facility EIS and the Portsmouth conversion facility EIS. As described in Section 5.3, cumulative effects are defined as the impacts on the environment resulting from the incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7). Cumulative effects include other actions regardless of what agency (federal or nonfederal), organization, or person undertakes them. Noteworthy cumulative impacts can result from individually minor, but collectively significant, effects of all actions. Therefore, the activities considered in the cumulative analysis in

each conversion facility EIS include those that might affect environmental conditions at or near the sites.

In the Paducah EIS, the cumulative impacts include the impacts associated with the proposed action and alternatives; waste management activities at the Paducah site; continued enrichment of uranium and storage of DUF₆ by USEC and DOE (management, only); conversion of DUF₆ without or with cylinders from ETTP (proposed action alternatives in this EIS); continued conversion of uranium ore into UF₆ at the Honeywell International, Inc., plant at Metropolis, Illinois; electrical power generation at the TVA's Shawnee power plant and at the Joppa Electric Energy, Inc., power plant; and environmental restoration activities at the Paducah site that have proceeded to a point that their consequences can be defined. Future actions included construction, operation, and D&D of a uranium enrichment facility at the Paducah site, even though Portsmouth has been identified by USEC as the site for a new centrifuge facility.

In the Portsmouth EIS, the cumulative impacts include the impacts associated with the proposed action and alternatives, including the impacts of constructing an additional storage pad; waste management activities at the Portsmouth site; conversion of the Portsmouth GDP to standby; construction, operation, and D&D of the Lead Cascade test uranium enrichment facility at Portsmouth; construction, operation and D&D of a uranium enrichment facility at the Portsmouth site; consolidation of reusable uranium in the DOE complex at the Portsmouth site; and environmental restoration activities that have proceeded to the point that their consequences can be defined.

COMMENTOR D0010: **Michael Klebe**
Central Midwest Interstate Low-Level Radioactive Waste
Commission

Comment D0010-001

I'm an engineer with the Illinois Emergency Management Agency, Division of Nuclear Safety. However, here, I am representing this evening the Central Midwest Interstate Low Level Radioactive Waste Commission. The commission, who recently met this past December, is very concerned about the transportation of low-level radioactive waste within its region. Clearly, the commission acknowledges that this radioactive material that would be shipped from the ETTP to either Portsmouth or Paducah is federal waste and is not, clearly, under the commission's jurisdiction. The commission is concerned about its safe transport nonetheless.

Response D0010-001

A Transportation Plan will be developed for each shipping program related to the DUF₆ conversion facility program. Each Plan is developed to address specific issues associated with the commodity being shipped, the origin and destination points, and concerns of jurisdictions transited by the shipments. In all cases, DOE-sponsored shipments will comply with all applicable state and federal regulations and will be reflected in many of the operational decisions to be made and presented in the Plan. The transportation

regulations are designed to be protective of public health and safety during both accident and routine transportation conditions.

As a matter of record, DOE considers DUF₆ a source material within the meaning of the Atomic Energy Act of 1954, as amended, and not as a “Federal waste.”

Comment D0010-002

Now, I admit that I have not made it through the entire Draft Environmental Impact Statement for both of the facilities to know whether or not these issues that I’d like to address this evening are included. But as part of the – as part of the Environmental Impact Statement, I would hope that it would include the potential impacts for transportation hazards, transportation accidents, and the impacts that this would represent to local first responders, whether or not these first responders are adequately trained, adequately supplied, adequately funded to respond to a transportation accident of the 4,000-plus casks that would be shipped from the ETTP to either Portsmouth or Paducah.

Response D0010-002

The two site-specific conversion facility EISs include evaluation of the risks associated with the transportation of radioactive and hazardous materials, including depleted uranium hexafluoride, depleted uranium oxide, hydrogen fluoride, and anhydrous ammonia. In the Portsmouth EIS, potential transportation impacts are discussed in Sections 5.2.5 and 5.2.7. In the Paducah EIS, transportation impacts are discussed in Sections 5.2.3 and 5.2.5. The transportation assessment includes evaluation of risks incurred during normal operations, as well as risks from accidents. The assessment considers both vehicle-related risks (i.e., risks related to vehicle operation, such as the potential for accidents causing injuries and fatalities) and cargo-related risks.

With respect to the potential impacts to first responders, the transportation accident assessment includes the evaluation of impacts to both the population living within 50 mi (80 km) of an accident site as well as to a maximally exposed individual (MEI) assumed to be exposed in the immediate vicinity of an accident. These receptors are assumed to be exposed to the passing plume of released material and to be unshielded and without protective equipment. Consequently, the impacts presented for the MEI represent an upper bound estimate of the risk posed to a first responder.

Comment D0010-003

I would hope that the Department of Energy would make some very specific commitments, time frames, in terms of providing the necessary support for the first responders along the path as it travels through Kentucky, not only in terms of transportation, not only in terms of training, but also in terms of funding for equipment and necessary materials that would be needed to respond to any sort of transportation accident.

Obviously, along the path, the path is both rural, the path is urban. Certain districts, fire departments, are more technically capable than others, but certainly they all should be – they all should be on a relatively equal footing in terms of funding and ability and training.

Response D0010-003

DOE maintains and operates an active training program dealing with first response to a transportation accident involving radioactive materials. This program, the Transportation Emergency Preparedness Program (TEPP), has conducted or provided technical support to numerous training programs in the three states hosting DOE facilities handling UF₆ — Kentucky, Tennessee, and Ohio. TEPP works actively with the Kentucky Division of Emergency Management, the Radiation Health and Toxic Agents Branch of the Kentucky Department for Public Health, the Tennessee Emergency Management Agency, and the Ohio Emergency Management Agency within the Ohio Department of Public Safety to ensure that first responder training concerns are met within this three-state area.

Because there is an extensive shipping history and significant ongoing shipping activities among these three facilities, the state agencies have a high level of awareness regarding the hazards associated with UF₆. TEPP staff members are committed participants in the emergency management and response community and plan to continue to support first responder readiness throughout these three states.

COMMENTOR D0011: Barbara Walton

Comment D0011-001

I think they did a good job of preparing these documents and I agree with the preferred alternatives.

Response D0011-001

Comment noted.

Comment D0011-002

...we have somewhat been overtaken by events and the decision has been made to build the centrifuge base enrichment plant at Portsmouth. And partly as a result of that, and partly for other reasons, the cumulative impacts section of the Portsmouth document, I feel, has some inadequacies, which I would like to see remedied in the final EIS. They refer to a 1977 document, a 1977 Analysis of Environmental Consequences for such an action that was done by U.S. Energy Research and Development Administration. This is on page 5-117 of the Portsmouth document. I would like to see that updated. I'm assuming that there will be an EIS done for the enrichment facility that will be built at Portsmouth. This document does state that it will be located in area B that was considered here, so there is no conflict there.

Response D0011-002

The cumulative impacts analysis included in both the draft and final Portsmouth conversion facility EIS assumed that a new USEC centrifuge enrichment facility would be constructed and operated at the Portsmouth site (see Sections S.5.16 and 5.3.2). As stated in Section S.5.16, the analysis assumed that such a plant would be sited at Portsmouth, that the existing DOE gas centrifuge technology would be used, and that the environmental impacts of such a facility would be similar to those outlined in a 1977 EIS for Expansion of the Portsmouth Gaseous Diffusion Plant that considered a similar action (ERDA 1977).

The 1977 EIS was used because it evaluated construction and operation of an 8.8 million separative work unit gas centrifuge enrichment facility at Location B of the Portsmouth site, compared to the currently proposed 3.5 million separative work unit USEC facility. The 1977 report was judged to be the best available information with respect to the potential impacts of a centrifuge facility at the Portsmouth site. Note that the centrifuge facility proposed in 1977 was never completed, so operational data are not available for estimating environmental impacts. It should be noted that the U.S. Nuclear Regulatory Commission (NRC) licensing activities for the proposed centrifuge enrichment plant will include preparation of an environmental impact statement that must also evaluate cumulative impacts at the Portsmouth site. The centrifuge enrichment facility cumulative impacts analysis will be based on the anticipated USEC enrichment facility design, which does not currently exist, and will benefit from the detailed evaluation of conversion facility impacts presented in this EIS.

The text of Sections S.5.16 and 5.3.2 has been revised to indicate that the final USEC centrifuge enrichment facility siting decision identified Portsmouth as the facility site.

Comment D0011-003

Also, there were, in the worker dose on page 5-115 there were two footnotes. Note i said that there was no worker dose given for the lead cascade and the information just was not available. And I hope that that can be remedied to where a better estimate than a 1977 document could be given for the final.

Response D0011-003

As described in Response D0011-002, the 1977 EIS was used because it was the best available information. The facility proposed in 1977 was never completed, thus data on actual environmental impacts are not available. With respect to footnote "i" and doses from the proposed lead cascade, the NRC published the final Environmental Assessment for the facility in January 2004 and no worker dose estimates were provided (NRC 2004).

Comment D0011-004

...there is a section on historical safety for Anhydrous Ammonia and Hydrogen Fluoride, which goes up through 2002, but the table of impacts on page 5-104 analyzes forty-nine percent and seventy percent Aqueous Hydrogen Fluoride. I suspect that was done because it is a bounding, but I would like a clear statement about that.

Response D0011-004

As noted by the commentor, the proposed conversion facility will produce aqueous HF. The transportation accident history for shipment of anhydrous HF was included in Section 5.2.3.4 of the Paducah EIS (Section 5.2.5.4 of the Portsmouth EIS) because it is the form of HF most commonly shipped in the United States and it is more hazardous than aqueous HF, thus representing a bounding case. Text has been added to this section to clearly state that the conversion facilities will produce aqueous HF and that the accident record for anhydrous HF was included for purposes of conservatism.

Comment D0011-005

I note that there was a recent derailment of fuming Sulfuric Acid in Knoxville and a lot of people were evacuated away from their homes for three or four days and that is a similar order of magnitude.

Response D0011-005

Anhydrous ammonia and aqueous hydrogen fluoride are chemicals that would be used or produced at the conversion facilities. Accidental releases of these chemicals could also cause injuries and might make evacuations necessary, similar to the situation discussed in the comment in which fuming sulfuric acid was released in a train derailment near Farragut, Tennessee, on September 15, 2002. Injuries and deaths from spills of anhydrous ammonia or aqueous HF are also possible. Section 5.2.5.3 of the Portsmouth EIS and Section 5.2.3.3 of the Paducah EIS discuss the possible consequences of a transportation accident involving the release of hydrogen fluoride or ammonia. Section 5.2.5.4 of the Portsmouth EIS and Section 5.2.3.4 of the Paducah EIS discuss the historical safety record of anhydrous ammonia and HF transportation in the United States.

Comment D0011-006

...in the Paducah Environmental Impact Statement on page 320 is figure 3.1-4 on the wetlands...this figure is titled Paducah, but it is the identical figure that is in the Portsmouth document on page 3-19. In other words, they have shown the Portsmouth wetlands in the Paducah document. And I assume that could be corrected for the final.

Response D0011-006

The figure showing wetlands at the Portsmouth site was inadvertently included in the Paducah draft EIS instead of the figure showing the wetlands at the Paducah site. The final EIS for the Paducah site includes the correct wetlands figure.

Comment D0011-007

...they say in the document that use of an overpack is most likely to ship the noncompliant cylinders, but they also analyze the building of a facility in Oak Ridge. I would like a more definitive statement on that. They don't analyze it as an alternative or give a preference, it's just a general statement and I would like a definite statement that that is what they plan to do. It's fine that they analyze more than one thing, which is what you are supposed to do in an EIS.

Response D0011-007

The two site-specific conversion EISs identify three possible options for shipping cylinders that do not comply with DOT requirements for the shipment of UF₆: (1) transferring the contents to compliant cylinders (likely requiring a new facility); (2) obtaining an exemption from DOT to ship the cylinders "as is," provided that DOE can demonstrate a level of safety that would be at least equal to the level required by the regulations; and (3) transporting the cylinders in a protective overpack. At present, a transportation plan for shipment of noncompliant cylinders has not been finalized and DOE is evaluating the available options. Consequently, the EISs provide an evaluation of these options. It should be noted that all shipments must be made in a manner that achieves the level of safety required by DOT regulations, regardless of the specific approach selected. Thus, in terms of potential environmental impacts, no option is clearly preferable.

COMMENTOR D0012: Norman A. Mulvenon

Comment D0012-001

My main theme is to thank the Department of Energy finally for issuing these environmental impact statements. And the second thing is that I concur with everything that Ms. Walton said. Barbara is very meticulous in reading these documents and is one of our resources in making sure that the Department of Energy follows all the rules. Our main theme here in Oak Ridge is that we ship those cylinders out of here. We don't particularly care whether they go to Portsmouth or Paducah, but they are scheduled to go to Portsmouth. There are some empties that have been recently sent to the Nevada test site and there are some partially filled cylinders that are ready to go to Ohio right now. And then the bulk of them are the cylinders which are going to be shipped out. Our main theme is that they should leave the City of Oak Ridge. They present an issue with us about being able to use the K-25 or ETTP site as a reindustrialization site. If you were a person who wanted to lease or build a building out there and all you see is thousands of these cylinders stacked around it, I don't think it is very conducive to people wanting to actually use the site. Our main theme; ship them out of here.

Response D0012-001

DOE is committed to complying with the 1999 consent order with the Tennessee Department of Environment and Conservation that requires the removal of the DUF₆ cylinders from the ETTP site or the conversion of the material by December 31, 2009. Toward that end, the DOE contract for accelerated cleanup of the ETTP site, including removal of the DUF₆ cylinders, calls for completion of this activity by the end of Fiscal Year (FY) 2008.

COMMENTOR D0013: **Susan Gawarecki, Executive Director**
Oak Ridge Reservation Local Oversight Committee

Comment D0013-001

I wanted to say that I concur with Barbara Walton and Norman Mulvenon and especially emphasize that safe and rapid shipment of the cylinders out is a high priority in this community. We would hope that UDS would look at this for their part of the shipping very early on, involve the stakeholders. Do consider the option of rail transportation instead of by truck. And understand that you are going to have to be working with a number of states and emergency management organizations as well. And there are good organizations already built up and a lot of planning done already. And certainly, we are eager to work with the company and make sure that they understand what the needs of the communities are. But again, we are very interested in seeing those cylinders shipped out in a timely and safe manner.

Response D0013-001

DOE is committed to complying with the 1999 consent order with the Tennessee Department of Environment and Conservation that requires the removal of the DUF₆ cylinders from the ETTP site or the conversion of the material by December 31, 2009. Toward that end, the DOE contract for accelerated cleanup of the ETTP site, including removal of the DUF₆ cylinders, calls for completion of this activity by the end of FY 2008.

In addition, all transportation operations will be conducted in accordance with applicable DOT regulations for the shipment of radioactive materials as specified in Title 49 of the *Code of Federal Regulations*. At present, a transportation plan for shipment of all the ETTP cylinders has not been finalized and DOE is evaluating the available options in the two conversion facility EISs, including both truck and rail transport modes. DOE is committed to working with state and local agencies, as appropriate.

COMMENTOR D0014: Charles Fosberg**Comment D0014-001**

...the facilities should include expandable long-term storage facilities for the stable Depleted Uranium Dioxide waste product. The historical record of the United States and other Western countries is that disposal always takes longer than planned. Plan ahead.

Response D0014-001

As described in Section 1.6.2.4, the conversion facilities are being designed with short-term storage capacity for 6 months worth of depleted uranium oxide production. This storage capacity is provided in order to accommodate potential delays in disposal activities without affecting conversion operations. There are no current plans to expand oxide storage at the conversion facilities. DOE plans to decide the specific disposal location(s) for the depleted U₃O₈ conversion product after additional appropriate NEPA review. Accordingly, DOE will continue to evaluate its disposal options and will consider any further information or comments relevant to that decision. DOE will give a minimum 45-day notice before making the specific disposal decision and will provide any supplemental NEPA analysis for public review and comment.

COMMENTOR D0015: Dan Minter
President, Paper, Allied-Industrial, Chemical and Energy (PACE)
International Union
Vice Chairman, Southern Ohio Diversification Initiative (SODI)

Comment D0015-001

1) PL 107-206 - Assurance that construction of both plants will be started on schedule on July 31, 2004. Further, both sites' construction must proceed expeditiously thereafter. (Section 502(c) of the Act) Meeting schedule is an environmental compliance issue.

Response D0015-001

DOE plans to start construction of the conversion facilities at both Paducah and Portsmouth by July 31, 2004. In compliance with the National Environmental Policy Act (NEPA), the schedule is dependent upon issuance of the Record of Decision (ROD) before construction begins. Compliance with P.L. 107-206 and the start of construction by July 31, 2004, involves many project and engineering activities. The DOE is working these activities in parallel to the extent it can to meet its commitment. DOE fully appreciates the importance of ensuring both that construction of the conversion facilities be started on schedule and that construction proceed in the most expedient manner possible. Compliance with NEPA must also be ensured and the engineering design must meet the contract requirements.

Comment D0015-002

2) Has DOE provided sufficient funds for construction of both plants for FY 05? This speaks to the question of whether statutory intent will be honored fully, or whether it will be constrained by allocation of funds in the President's budget request. Failure to meet schedule is an environmental issue.

Response D0015-002

Sufficient funds for completion of design and start of construction activities at both Paducah and Portsmouth have been allocated for FY04. Funding levels for FY05 will be contingent on Congressional approval of the FY05 Presidential budget request.

Comment D0015-003

3) PL 107-206 provides access to the \$373 million by the Secretary without need for further appropriation, by virtue of removing the fence on the expenditures of funds. This money is in account number 95X4054 in the U.S. Treasury. The GAO's Letter Report January 19, 2000 to Chairman Billy Tauzin of the House Energy & Commerce Committee regarding the use of funds for the Portsmouth Cold Standby Plan (B-286661), states that the USEC fund is available to meet the authorized purposes of the McConnell Act (P.L. 105-204). Please explain whether and how DOE is using these funds? If not, please explain why?

Response D0015-003

DOE is not using the subject funds. To date, funding for the design and construction project has been requested for appropriation from the general fund. The Congress has raised no objection to this approach, and it is the Department's intent to continue the practice until completion. The funds reserved in the USEC Fund (95X4054) may be authorized for project use; however, authorization does not imply that they are available without need for Congressional appropriation. In fact, they are not available for the DUF₆ Conversion Project outside of the appropriation process. Therefore, there is no advantage to requesting funds from the reserved account.

Comment D0015-004

4) Are there foreign ownership and control issues that are impairing the ability of the contractor and DOE to meet the statutory schedule? If so, what are the plans for resolving this potential delay?

Response D0015-004

DOE initially expected that the contractor would not need facility clearance during the design and construction periods of the contract, but may need security clearances during cylinder management and conversion operations. This allowed the Department to move forward with contract award consistent with P.L. 107-206. Since contract award and as a

result of post-September 11, 2001, heightened security requirements, the Department has been evaluating the need for facility clearance and the potential impacts to the project. In an effort to reduce capital and operating costs that would be incurred if work had to be accomplished in a classified manner, the Department is considering alternatives involving a favorable Foreign Ownership, Control and Influence (FOCI) determination, mitigation measures, and contract modification. Resolving this matter is expected to be lengthy and involve discussions with the contractor and DOE experts on national security. In the interim, the contractor must move forward in accordance with contract requirements and provide engineering, construction, and operations plans that allow work to proceed without the need for classified access and avoid schedule impacts.

Comment D0015-005

5) Socioeconomic Impact - Will DOE direct Bechtel Jacobs to admit UDS to the Multiple Employer Pension Plan? If not, please advise how DOE will assure that UDS will provide pension continuity?

Response D0015-005

DOE is currently investigating options for pension continuity; however, this comment is beyond the scope of issues addressed in this EIS.

Comment D0015-006

6) It appears from the supplied data that impacts no action would in fact pose greater risk to environment and public safety? This is based on decay of the containment vessels and surveillance painting potential impacts and other required up-keep activities. Is this what the EIS is stating based on a no action plan?

Response D0015-006

Yes, in general the EISs show greater impacts for the no action alternative than for the proposed action of constructing and operating the conversion facilities. For normal operations, the EISs estimate a risk of developing cancer for workers at the cylinder yards and the conversion facilities that is slightly higher than the background risk. However, over the life of the project, the increased cancer risk for workers is greatest under the no action alternative (i.e., continued storage of the cylinders). For the Paducah site, for example, the risk is a 1 in 7 chance of one additional latent cancer fatality for the proposed action alternatives, whereas the risk is a 1 in 2 chance of one additional latent cancer fatality for the no action alternative (see Tables S-6 and 2.4-1). Increased cancer risks for noninvolved workers and the general public are similarly higher for the no action alternative than for the proposed action alternatives (this also applies to the Portsmouth EIS). Additionally, the no action alternative has the potential for groundwater contamination with uranium over the long-term; this adverse impact is not anticipated under the proposed action alternatives.

Risks associated with accidents are somewhat higher for the proposed action alternatives than for the no action alternative. The highest risks are associated with transport of anhydrous NH₃ and aqueous HF. However, these chemicals are transported routinely in the United States with a good safety record that has improved in recent years due to closer manufacturer supervision of container inspections, installation of protective devices on railcars, and participation of shippers in the Chemical Transportation Emergency Center. Similar though slightly lower risks are also associated with potential accidental releases from DUF₆ cylinders during continued storage. Although the probability of large accidental releases is very low under both the proposed action alternatives and the no action alternatives, risks can only be completely eliminated when the conversion of the DUF₆ inventory has been completed.

Comment D0015-007

7) How, given the risks of a no action option and the fact that time is not an element conducive to the current method of vessel storage, provisions of Public law 105-204 and 107 -206, clear Congressional intent and 1/3 billion in available funding; why is a no action option even a proposed option under consideration?

Response D0015-007

In its NEPA regulations, the Council on Environmental Quality (CEQ) requires that the alternatives analysis in EISs “include the alternative of no action” [Section 1502.14(d)]. Accordingly, the regulations require the analysis of the no action alternative even if the agency is under a court order or legislative command to act. This analysis provides a benchmark, enabling decision makers to compare the magnitude of environmental effects of the action alternatives. It is also an example of a reasonable alternative outside the jurisdiction of the agency which must be analyzed. Inclusion of such an analysis in the EIS is necessary to inform the Congress, the public, and the President as intended by NEPA.

COMMENTOR D0016: **Gregory Simonton, Executive Director**
Southern Ohio Diversification Initiative

Comment D0016-001

We believe that the best alternative to dealing with the DUF₆ waste at the US DOE Piketon site is to build the DUF₆ Conversion Plant, as directed by Public Laws 105-204 and 107-206, at Piketon, Ohio, to convert the material into a more stable form for use and/or disposal. We also agree that location A (former lithium hydroxide monohydrate storage area) is the best location for the facility.

We oppose the no action alternative and long-term storage of the cylinders and conversion products at the US DOE Piketon site...We also oppose the construction of one conversion plant for two sites.

Response D0016-001

The support for the proposed action and for Preferred Location A at the Portsmouth site is noted.

With respect to the no action alternative, as explained in Response D0015-007 above, in its NEPA regulations, the CEQ requires that the alternatives analysis in an EIS “include the alternative of no action” [Section 1502.14(d)].

Long-term storage and/or construction and operation of one-plant are not being proposed or considered as alternatives in the two site-specific conversion facility EISs. Such alternatives were previously analyzed in the *Programmatic EIS for Alternative Strategies for the Long-Term Management and Use of Depleted UF₆* (DOE 1999).

Comment D0016-002

As the designated community reuse organization, SODI expects to be involved in the sale of conversion products so that revenues will be used to benefit the community and local governments that are hosting and supporting the conversion plant operations.

Response D0016-002

DOE expects that any revenues generated from the sale of conversion products would be used to off-set the operational costs of the conversion facilities. This approach helps to lessen project dependence on federal allocations and reduce future funding uncertainties, indirectly benefiting the local community by promoting project continuity. In addition, it is expected that sales tax generated from the sale of conversion products would directly benefit the local communities hosting the conversion facilities.

Comment D0016-003

Because the DUF₆ material is chemically toxic to humans if released into the atmosphere, it is imperative that safety and health issues are given top priority to protect the workers, the community, and the environment.

Response D0016-003

The conversion facility project will be conducted with a commitment to keeping workers, the public, and the environment safe. The EISs include detailed evaluations of the potential impacts to human health and safety, including workers directly involved in conversion facility operations, other workers located at the sites, as well as members of the public living around the sites. In the Paducah EIS, potential health and safety impacts during operations are discussed in Sections 5.2.2.1 and 5.2.2.2 for routine conditions and accidents, respectively. In the Portsmouth EIS, potential health and safety impacts during operations are discussed in Sections 5.2.3.1 and 5.2.3.2 for routine conditions and

accidents, respectively. The results of the analyses indicate that the risks to human health and safety are expected to be low and well within applicable limits and regulations.

Comment D0016-004

We do not support the transport of “repaired” or “as is” non-compliant cylinders from ETTP to Piketon. We strongly urge US DOT not to grant exemptions, but to require DUF₆ contents to be transferred from non-compliant cylinders to new or compliant cylinders prior to shipment to Piketon. Shipping and then storing non-compliant cylinders from ETTP at Piketon increases the risk of exposure to toxic chemicals to workers, the community, and the environment. We also believe that DUF₆ cylinders from ETTP should be shipped only as the Piketon inventory of DUF₆ material is safely converted and space becomes available.

Response D0016-004

Comments noted. At present, a transportation plan for shipment of noncompliant cylinders has not been finalized and DOE is evaluating the available options. Consequently, the EISs provide an evaluation of the possible options. It should be noted that all shipments must be made in compliance with DOT regulations, regardless of the specific approach selected. Thus, in terms of potential environmental impacts, no option is clearly preferable.

COMMENTOR D0017: **Steve Meiners, Regional Manager**
Safety and Ecology Corporation

Comment D0017-001

Please consider barge transport in a second draft EIS for public comment. Barge is more economical and safer than truck or rail transport. It is safer for the public because it involves no onboard fuel and does not place the cylinders in harms way in proximity to fuel trucks and other fuel-laden conveyances moving at high speed in opposing and cross-traversing traffic.

Response D0017-001

The transportation of cylinders by barge was considered, but not analyzed in detail in the two conversion facility EISs. As discussed in Section 2.3.5 of each EIS, barge transport was not considered in detail primarily because the nearest functioning barge facilities to Portsmouth and Paducah are located between 20 and 30 miles from the sites. Consequently, overland transportation would be required at each end of the route, as would additional cylinder loading and unloading steps. In addition, truck and rail were identified as the likely cylinder transport modes in conversion facility design documents.

As with any transportation mode, barge transport has associated advantages and disadvantages. As noted by the commentor, during barge transport there is no onboard fuel available and the shipment is not in close proximity to other transport vehicles, factors which could reduce, but not eliminate, potential accident risks. However, barge

transport would require overland transportation by truck on each end of the route, as well as additional handling of cylinders during the loading and unloading of the barge. These activities have associated accident risks and would contribute to the radiation exposure of workers during normal cylinder handling. In addition, shipment by barge could require dredging of the river bottoms at the barge facilities, an activity with potential environmental impacts.

It should be noted that, regardless of the transport mode, all cylinder shipments must comply with the DOT regulations for the shipment of radioactive materials, as specified in Title 49 of the *Code of Federal Regulations*. These regulations are designed to be protective of public health and safety during both accident and routine transportation conditions.

Because barge transport was not considered to be a reasonable option and has not been proposed as part of the current conversion facility project, a detailed evaluation has not been included in the Final conversion facility EISs. If barge transportation was proposed in the future and considered reasonable, additional NEPA review would be conducted. Such a review would address all issues associated with the proposed activity.

COMMENTOR D0018: **Paul R. Baldrige**
Ohio Department of Natural Resources

Comment D0018-001

The Ohio Department of Natural Resources (ODNR) has no concerns with this proposed project. No rare or endangered species, unique natural features, state nature preserves or scenic rivers were identified within or adjacent to the project site. Additionally, ODNR does not think the proposed project will negatively impact any rare or endangered species, ODNR properties, or rare geological features outside of the project area.

Response D0018-001

Comment noted.

COMMENTOR D0019: **M. Jonathan Haire**

Comment D0019-001

The EIS does not describe the role of the U.S. Nuclear Regulatory Commission, especially in licensing the product for disposal. Clarifying the role of various licensing agencies would be beneficial to the reader.

Response D0019-001

Section 1.6.2.4 discusses the scope of the EIS with respect to the disposition of the conversion products (HF, CaF₂, and depleted U₃O₈). As that section indicates, studies

conducted by Oak Ridge National Laboratory (ORNL) for DOE have shown that both the NTS and Envirocare of Utah, Inc. could be acceptable disposal facilities for depleted U₃O₈, and UDS provided evidence in its proposal that both sites could accept the depleted U₃O₈. The NTS is a DOE facility that operates and is authorized to receive wastes in conformance with DOE directives. The Envirocare of Utah, Inc. facility is a commercial facility that is licensed to operate and receive wastes by the Utah Department of Health, Bureau of Radiation Protection, which is an NRC Agreement State agency. This means that the NRC has evaluated Utah laws and regulations implemented by the Bureau of Radiation Protection and determined them to provide a program of administration, licensure, and enforcement for certain radioactive materials that is equivalent to the NRC program. Thus, the NRC itself has no direct role in licensing either of the facilities currently being considered for disposal of the depleted U₃O₈ product. Notwithstanding, other facilities licensed by the NRC may be considered in the future for depleted U₃O₈ disposal. Therefore, as Section 1.6.2.4 of the EIS indicates, any depleted U₃O₈ destined for disposal will be transported from the conversion facility to disposal sites that would be (1) selected in a manner consistent with DOE policies and orders and (2) authorized or licensed to receive the conversion products by DOE (in conformance with DOE directives), the NRC (in conformance with NRC regulations), or an NRC Agreement State agency (in conformance with state laws and regulations determined to be equivalent to NRC regulations). DOE plans to decide the specific disposal location(s) for the depleted U₃O₈ conversion product after additional appropriate NEPA review. Accordingly, DOE will continue to evaluate its disposal options and will consider any further information or comments relevant to that decision. DOE will give a minimum 45-day notice before making the specific disposal decision and will provide any supplemental NEPA analysis for public review and comment.

Comment D0019-002

The product of the conversion facilities is said to be U₃O₈. In fact it is a complex mixture of uranium oxides, urania. Most of the beneficial uses of depleted uranium use uranium dioxide, UO₂. I urge the project to include provisions to fabricate UO₂.

Response D0019-002

DOE agrees that the conversion product is a mixture. The two site-specific EISs have been revised to clearly indicate that the conversion product is indeed a mixture of uranium oxides, with U₃O₈ being the predominant chemical form (estimated to be more than 80% of the product). The terms “depleted uranium oxide” and “depleted U₃O₈” are used interchangeably throughout the EISs in reference to the conversion product.

Currently, there are no plans or proposals to convert the depleted UF₆ inventory to UO₂. The two site-specific EISs address the potential environmental impacts of the proposed conversion facilities as currently envisioned. Alternative uranium conversion products, including UO₂, were evaluated in the *Programmatic EIS for Alternative Strategies for the Long-Term Management and Use of Depleted Uranium Hexafluoride* (DOE 1999). In addition, several alternative conversion products were evaluated during the conversion

services procurement process, as summarized in the environmental synopsis included in Appendix D of each site-specific conversion EIS. If conversion to UO₂ were proposed in the future, additional NEPA review would be conducted.

COMMENTOR D0020: **David N. Mosby, Chair**
Oak Ridge Site-Specific Advisory Board

Comment D0020-001

The Oak Ridge Site-Specific Advisory Board (ORSSAB) would like to clarify that the overall intent of the recommendation is to accelerate the removal of all UF₆ cylinders in inventory at the East Tennessee Technology Park...ORSSAB fully supports the accelerated shipping schedule for DUF₆ cylinders from ETPP.

Response D0020-001

Comment noted.

Comment D0020-002

Additionally, we recommend that DOE keep open and not preclude transportation options other than highway.

Response D0020-002

The two site-specific conversion facility EISs evaluate transportation by both highway and rail modes in detail. Transportation by air and barge were considered, but not evaluated in detail for the reasons provided in Section 2.3.5 of each EIS (see also the response to Comment D0017-001 with respect to barge shipments). The detailed evaluation of only truck and rail modes in the Final EISs does not preclude the use of other modes in the future. However, if an alternative transportation mode was proposed and considered reasonable, additional NEPA review would be conducted. Such a review would address all issues associated with the proposed activity. It should be noted that, regardless of the transport mode, all cylinder shipments must comply with DOT regulations for the shipment of radioactive materials, as specified in Title 49 of the *Code of Federal Regulations*. These regulations are designed to be protective of public health and safety during both accident and routine transportation conditions.

Comment D0020-003

Finally, we recommend that DOE manage the safety aspects of the program consistent with the entire knowledge base of the hazards associated with handling UF₆ and inform the public about any plans to seek exemptions from more stringent requirements that may be evolving.

Response D0020-003

DOE is committed to continuing for as long as necessary the safe management of its depleted UF₆ cylinder inventory, consistent with inherent hazards of the material and all applicable regulatory requirements. Continued public and community involvement is an important component of that commitment.

COMMENTOR D0021: Paul D. Kalb

Comment D0021-001

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.

Response D0021-001

As discussed in Section 2.2.3 of each site-specific conversion facility EIS, DOE requested in its Request for Proposals that the bidders for conversion services investigate and propose viable uses for the products of conversion. The conversion process would generate four conversion products that have a potential use or reuse: depleted uranium oxide, HF, CaF₂, and steel from emptied DUF₆ cylinders (if not used as disposal containers). According to the selected contractor (UDS), of the four conversion products, only HF has a viable commercial market currently interested in the product. Therefore, UDS expects that the HF would be sold to a commercial vendor pending DOE approval of the residual contamination limits and the sale. Although the depleted uranium oxide and emptied cylinders have the potential for use or reuse, currently none of the uses have been shown to be viable because of cost, perception, feasibility, or the need for additional study. Thus, UDS expects most, if not all, of the uranium oxide and emptied cylinders to be disposed of. If a viable use for the depleted uranium product is identified in the future, further NEPA review may be required. In addition, appropriate authorization limits or licenses would be obtained depending on the proposed use.

COMMENTOR D0022: **Graham Mitchell**
State of Ohio Environmental Protection Agency

Comment D0022-001

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.

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.

Response D0022-001

Comment noted.

Comment D0022-002

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.

Response D0022-002

DOE and Uranium Disposition Services (UDS), DOE's construction and operations contractor, are aware of the deed notice and the restrictions contained therein. The X-616 Chromium Sludge Lagoon and its associated monitoring wells are, at their nearest point, located approximately 100 feet from the DUF₆ conversion facility site boundary. To prevent direct impacts and ensure the integrity of these areas, they will be clearly marked and identified, suitable buffer zones established around them, and entry of conversion facility personnel or equipment into these areas prohibited.

To prevent indirect impacts, best available technologies (BAT) will be identified and implemented to prevent the transport of air particulates and liquid effluents or discharges originating at the facility site from trespassing or impacting upon the RCRA unit. Technologies to prevent air particulate transport could include using water sprays on dirt roadways and on bare, excavated, and staged or bunkered soils; covering open bodied trucks transporting materials likely to become airborne; covering staged or bunkered

soils; maintaining paved roadways in good repair and in a clean condition; mulching or covering bare soils until they are paved or vegetation has been established; prohibiting open burning; and using barriers and windbreaks around construction areas.

Technologies to prevent trespass or impact by liquid discharges or effluents could include storm water and sediment controls such as temporary and permanent seeding, mulching and matting, sediment barriers, traps, and basins, silt fences, and runoff and diversion banks; prohibiting the discharge of liquid effluents to the facility site environment; properly maintaining and repairing vehicles and equipment; storing and managing materials in appropriate areas and containers; providing secondary containment around liquid storage areas; and promptly cleaning up and containerizing any inadvertent leaks and spills.

Comment D0022-003

The EIS should be expanded to discuss the potential to accept the DUF 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 DUF₆ cylinders.

Response D0022-003

At the present time, there are no plans or proposals for DOE to accept DUF₆ cylinders for conversion beyond the current inventory for which it has responsibility. However, Section 2.2.7 of the Portsmouth site-specific conversion facility EIS (Section 2.2.5 of the Paducah EIS) discusses a number of possible future sources of additional DUF₆ that could require conversion, including the operation of a new USEC centrifuge facility. The section has been revised to indicate that USEC has announced that Portsmouth is the preferred site for such a facility. In addition, potential environmental impacts associated with expanded plant operations (including extending plant operations and increasing plant throughput) are discussed in Section 5.2.8 of the Portsmouth EIS (Section 5.2.6 of the Paducah EIS).

Because of the uncertainty associated with possible future sources of DUF₆ for which DOE could assume responsibility, there is no current proposal to increase the throughput of the Portsmouth facility or extend operations. On the basis of its experience with other projects, DOE believes that the assumed process availabilities in the proposed DUF₆ conversion facilities can be improved by making process changes during operations, and thus the throughput of DUF₆ cylinders can be increased. However, for purposes of the EIS, it was assumed that the Portsmouth conversion process building would be designed and built with sufficient space to accommodate an increased plant throughput sometime in the future. The modular design of the dry conversion process — the Portsmouth and Paducah facilities are being designed with three and four parallel conversion lines, respectively — facilitates process expansion. In addition to the potential impacts associated with expanded plant operations, Section 5.2.8 of the Portsmouth EIS also discusses potential impacts that would be associated with a conversion facility consisting

of four process lines rather than three. If a decision is made in the future to increase the number of parallel process lines beyond four at either site, additional NEPA review would be conducted.

Comment D0022-004

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 is considered a hazardous waste by the State of Ohio and that there is an Administrative Order governing how the DUF cylinders are to be managed at the site.

Response D0022-004

Section 1.1.2 in the Portsmouth Final EIS discusses the concerns of the State of Ohio regarding the characterization of depleted UF₆ pursuant to RCRA. Also, Table 6.1 in the EIS lists the OEPA Director's Final Findings and Orders (issued February 24, 1998) among the licenses, permits, and other consents that would apply during construction and operation of the depleted UF₆ conversion facility.

With regard to the three Consent Orders identified in the comment, the Portsmouth affected environment section (Chapter 3) has been modified to reflect the fact that the monitoring results reported therein are the product of the ongoing cleanup program, as defined by the Consent Orders.

Comment D0022-005

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?

Response D0022-005

The older cylinders will not be processed preferentially because age alone is not necessarily an indicator of the cylinder condition. UDS will develop a processing strategy based on the cylinder condition, location, and characteristics. UDS is required by contract to process the cylinders in a systematic manner and is prohibited from purposefully setting aside degraded cylinders. These issues will be addressed in cylinder storage, maintenance, and operations plans and procedures.

Comment D0022-006

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.

Response D0022-006

The emptied cylinders will be visually inspected prior to and immediately after being placed in the aging yard. Since the residues remaining in the cylinders after emptying will be stabilized, there will be no reactive products that would be released. The yard itself will be subjected to routine monitoring for contamination (approximately monthly) in accordance with operational facility plans and procedures. Please note that a breach in the conversion process is highly unlikely; but if it were to occur, it would be known immediately, because the autoclaves are equipped with sensors that can detect HF present in the airspace outside of the cylinder.

Comment D0022-007

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.

Response D0022-007

The suggestion to decommission and decontaminate the X-616 solid waste management unit (SWMU) and the old fire training area is noted; however, two additional cylinder yard storage areas have been identified that are adjacent to the current cylinder storage yards should additional storage be needed. These yard locations are described in Section 2.2.5 of the EIS, and the environmental impacts from constructing a new storage yard are discussed in detail in Section 5.2.1.

Decommissioning and decontamination of site locations impacted by past activities is being addressed by ongoing remediation programs at the site that are outside the scope of the conversion facility EIS.

Comment D0022-008

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 to be interred in a facility that accepts construction debris waste, other waste would be considered mixed waste and shall be shipped off site to an appropriate facility.

Response D0022-008

Additional information has been added to Section 5.9.5, Waste Management, of the Decommissioning and Decontamination section (Section 5.9) of each EIS that elaborates on the waste disposal process.

Comment D0022-009

Table S-2 page S-13: The table should also include a bulleted item under Proposed Action describing how the DUF₆ 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.

Response D0022-009

At the present time, there are no plans or proposals for DOE to accept DUF₆ cylinders for conversion beyond the current inventory for which it has responsibility. However, Section 2.2.7 of the Portsmouth site-specific conversion facility EIS (Section 2.2.5 of the Paducah EIS) discusses a number of possible future sources of additional DUF₆ that could require conversion, including the operation of a new USEC centrifuge facility. Because of the uncertainty associated with these possible future sources of DUF₆, there is no current proposal for DOE to maintain or convert such material. Consequently, activities related to these possible sources have not been included as part of the proposed actions considered in the two site-specific conversion facility EISs. However, to account for the possible processing of additional material in the future, potential environmental impacts associated with expanding conversion facility operations, either by extending the operational period or by increasing throughput, are included in Section 5.2.8. Management of the cylinders generated by USEC would be USEC's responsibility and would be addressed in future NEPA documentation prepared specifically for the centrifuge facility. The cumulative impacts discussion in Section 5.3 of the EISs includes the consideration of building the centrifuge facility at Portsmouth or Paducah in general terms.

Comment D0022-010

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?

Response D0022-010

No, the overpacks are assumed to be reusable. Note that the overpacks may be necessary for off-site cylinder transport, but not storage. The cylinders will be moved in accordance with the current cylinder movement procedures in place at Portsmouth. These procedures are similar to the procedures in place at ETTP and Paducah. The cylinders arriving from ETTP will be handled and managed similarly to the cylinders already at Portsmouth. A 2003 Agreed Order between the Commonwealth of Kentucky and DOE stipulates that a

detailed inspection procedure be followed prior to cylinder relocations within the Paducah site; the Portsmouth site follows similar procedures. Prior to movement or feeding into the conversion facility autoclaves, the cylinders would be visually inspected to ensure that no damage had occurred since the last scheduled inspection. No cylinder would be moved or fed into the process unless there was a high degree of confidence in its ability to withstand the handling.

Comment D0022-011

Page S-39, S.5.5 Water and Soil: The text should indicate that best available practices 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.

Response D0022-011

Following good engineering practices during construction has the same intent as following BAT protocol. Text has been added to Sections S.5.5 and 5.2.2.4 giving examples of good construction practices that might be implemented (e.g., covering chemicals with tarps to prevent interaction with rain, promptly cleaning up any spills). Additional practices that might be implemented include sediment and erosion controls such as temporary and permanent seeding; mulching and matting; sediment barriers, traps, and basins; silt fences; and runoff and earth diversion dikes.

Comment D0022-012

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.

Response D0022-012

The employment ranges provided to Ohio and referred to in the comment are likely the direct employment impacts of construction and operation of the conversion facility. Indirect impacts also occur at each site as wages and salary spending and the local procurement of materials and services produce additional impacts. The socioeconomic impacts in the Final EISs have been revised based on more recent cost data provided by the conversion facility contractor (UDS 2003). Based on the revised data, the peak year total (direct and indirect) employment impacts of a conversion facility during construction would be 290 jobs at Paducah and 280 jobs at Portsmouth. Operations

impacts would be 330 jobs at Paducah and 320 jobs at Portsmouth. Data on employment impacts can be found in Sections 5.2.1.5 and 5.2.2.5 for Paducah and Sections 5.2.2.5 and 5.2.3.5 for Portsmouth.

Comment D0022-013

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?

Response D0022-013

The current stabilization media proposed is a 45% potassium hydroxide solution, but other media, such as magnesium oxide has been shown to be equally effective. The stabilization process is designed to neutralize the HF vapor that might be emitted from the small amount of residual DUF₆ in the cylinder heel. Any HF that might escape when the cylinder is opened to inject the stabilization media will be trapped locally. No other gases are expected from the stabilization process. Note also, that when the cylinder is removed from the autoclave it is at a negative pressure and thus the stabilizing media will be drawn into the cylinder.

Comment D0022-014

Page S-41, section S.5.8: Will the U₃O₈ generated be considered a LLW or a LLMW? How will this be determined?

Response D0022-014

In accordance with Section 3734.01 in the Ohio Revised Code (ORC 3734.01), Section 2014 in Title 42 in the *United States Code* (42 USC 2014), and directives DOE O 435.1 and DOE M 435.1-1, U₃O₈ that is destined for disposal will be managed as low-level waste (LLW). DOE plans to decide the specific disposal location(s) for the depleted U₃O₈ conversion product after additional appropriate NEPA review. Accordingly, DOE will continue to evaluate its disposal options and will consider any further information or comments relevant to that decision. DOE will give a minimum 45-day notice before making the specific disposal decision and will provide any supplemental NEPA analysis for public review and comment.

Comment D0022-015

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.

Response D0022-015

The actual area disturbed during construction would be expected to be less than the values given in the EISs (65 acres at Portsmouth and 45 acres at Paducah). In fact, UDS, the contractor charged with designing and operating the conversion facilities at Paducah and Portsmouth for the first 5 years, has reduced the estimates for areas disturbed to 21 acres at Portsmouth and 24 acres at Paducah. However, to bound the impacts associated with disturbed areas during construction activities, the EISs used the larger areas identified above for impact analyses. Because the exact locations of all the disturbed areas, except for the area where the buildings would be constructed, are not known, no drawings or figures are provided in the EISs.

UDS will employ best management practices to minimize the area disturbed during construction. Also, the impacts associated with disturbed areas will be mitigated to the extent possible. Technologies that will be used to mitigate air quality impacts during construction include using water sprays on dirt roadways and on bare soils in work areas for dust control; covering open-bodied trucks transporting materials likely to become airborne when full and at all times when in motion; water spraying and covering bunkered or staged excavated and replacement soils; maintaining paved roadways in good repair and in a clean condition; using barriers and windbreaks around construction areas such as soil banks, temporary screening, and/or vegetative cover; mulching or covering exposed bare soil areas until vegetation has time to recover or paving has been installed; and prohibiting any open burning. Impacts to water quality and soil will be minimized through implementing storm water management, sediment, and erosion controls (e.g., temporary and permanent seeding; mulching and matting; sediment barriers, traps, and basins; silt fences; runoff and earth diversion dikes), and good construction practices (e.g., covering chemicals with tarps to prevent interaction with rain, promptly cleaning up any spills).

Comment D0022-016

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.

Response D0022-016

A detailed discussion of the terrestrial and aquatic habitats that would potentially be lost as a result of facility construction can be found in Section 5.2.2.6 of the Portsmouth EIS. Approximately 10 acres of previously disturbed managed grassland vegetation would be expected to be lost due to facility construction at any of the candidate locations. Railway construction at Location A would impact small previously disturbed wooded areas and areas of previously disturbed managed grassland. Much of a wetland approximately 0.08 acre in size would be impacted by the construction of a facility entrance road at

Location A. However, the impact may potentially be avoided by an alternative routing of the entrance road, or mitigation may be developed in coordination with appropriate regulatory agencies. Impacts to wetlands at Locations B and C could likely be avoided. The types of ecological impacts resulting from the presence of the facility during operations are described in Section 5.2.3.6. A description of the habitats and wildlife on and near the proposed facility location can be found in Section 3.1.6.

Comment D0022-017

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 U₃O₈ storage building and releasing 145 lb. of depleted U₃O₈. For no action, a cylinder ruptures-fire is given as the bounding accident with 24,000 lb of UF₆ released. On Pg. S-12, the cylinder accident is stated 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.

Response D0022-017

More details on the accidents analyzed in the EISs and the estimated impacts are given in Sections 5.2.3.2 (Portsmouth EIS) and 5.2.2.2 (Paducah EIS) for facility accidents and Sections 5.2.5 (Portsmouth EIS) and 5.2.3 (Paducah EIS) for transportation accidents. Supporting documents referenced from within the above cited sections, in particular (Policastro et al. 1997 and UDS 2003) provide further details on both the accidents considered and the estimated consequences from them.

Comment D0022-018

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 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.

Response D0022-018

At the present time, there are no plans or proposals for DOE to accept DUF₆ cylinders for conversion beyond the current inventory for which it has responsibility, or to transfer cylinders from Paducah to Portsmouth. However, Section 2.2.7 of the Portsmouth site-

specific conversion facility EIS (Section 2.2.5 of the Paducah EIS) discusses a number of possible future sources of additional DUF₆ that could require conversion. In addition, the section points out that, under some circumstances, it could be beneficial to transfer cylinders from Paducah to Portsmouth at some time in the future. The potential environmental impacts associated with expanded plant operations (including extending plant operations and increasing plant throughput) are discussed in Section 5.2.8 of the Portsmouth EIS and Section 5.2.6 of the Paducah EIS.

Because of the uncertainty associated with possible future sources of DUF₆ for which DOE could assume responsibility, there is no current proposal to increase the throughput of the conversion facilities or extend operations. However, for purposes of the EIS, it was assumed that the Portsmouth conversion process building would be designed and built with sufficient space to accommodate an increased plant throughput sometime in the future. The modular design of the dry conversion process — the Portsmouth and Paducah facilities are being designed with three and four parallel conversion lines, respectively — facilitates process expansion. In addition to the potential impacts associated with expanded plant operations, Section 5.2.8 of the Portsmouth EIS also discusses potential impacts that would be associated with a conversion facility consisting of four process lines rather than three. If a decision is made in the future to increase the number of parallel process lines beyond four at either site, additional NEPA review would be conducted.

The permitting and compliance requirements applicable to transportation and conversion of DUF₆ are discussed in Chapter 6 of each site-specific EIS. These are the requirements that would apply to DUF₆, if any cylinders were shipped from Paducah to Portsmouth for conversion. It is expected that DOE would confer with the State of Ohio regarding any future decisions to accept DUF₆ at the Portsmouth DUF₆ facility from off-site locations, as was done for the referenced ETTP cylinder shipments. It should be noted that UF₆ cylinders were routinely transported from Paducah to Portsmouth during operation of the Portsmouth gaseous diffusion plant.

Comment D0022-019

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.

Response D0022-019

The two site-specific conversion facility EISs evaluate transportation by both highway and rail modes in detail. Transportation by air and barge were considered, but not evaluated in detail for the reasons provided in Section 2.3.5 of each EIS (see also the response to Comment D0017-001 with respect to barge shipments). The detailed evaluation of only truck and rail modes in the Final EISs does not preclude the use of other modes in the future. However, if an alternative transportation mode was proposed

in the future and considered reasonable, additional NEPA review would be conducted. Such a review would address all issues associated with the proposed activity.

Comment D0022-020

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

Response D0022-020

In response to the referenced Comment 7 (Comment D0022-008), additional information concerning waste management has been added to Section 5.9, Decontamination and Decommissioning, of each EIS (see response to Comment D0022-008).

Comment D0022-021

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.

Response D0022-021

The text in Section 2.4.2.2 of the Portsmouth EIS (Facility Accidents Involving Radiation or Chemical Releases) and the corresponding section of the Paducah EIS have been revised to reference the cylinder management plans, stating that these plans describe the steps that must be taken should a breach in the DUF₆ cylinders occur.

Comment D0022-022

Section 5.2.2.3.1 Based on the information provided in this section. It appears that fugitive dust emissions (PM₁₀, and PM_{2.5}) concentrations ($\mu\text{g}/\text{m}^3$) from construction activities may exceed the National Ambient Air Quality Standards NAAQS for PM₁₀ and PM_{2.5}. Additional emission control methods, operational restrictions, or monitoring need to be implemented to assure that the NAAQS are not exceeded.

Response D0022-022

The draft Portsmouth EIS showed that the 24-hour PM₁₀ increment from construction at Location A would be 64% of the standard; with background included, the total ambient concentration could exceed the standard of 150 $\mu\text{g}/\text{m}^3$ by 10 $\mu\text{g}/\text{m}^3$. The annual PM₁₀ (particulate matter with a mean aerodynamic diameter of 10 μm or less) standard would not be exceeded. Similarly, the 24-hour and annual PM_{2.5} (particulate matter with a mean aerodynamic diameter of 2.5 μm or less) increments from construction at Location A would be about 30% of the standards, but with background included; the standards would be exceeded (the annual average could be as high as 29 $\mu\text{g}/\text{m}^3$, in comparison with the standard of 15 $\mu\text{g}/\text{m}^3$).

The background data used are the maximum values from the last 5 years of monitoring at the nearest monitoring location (operated by the Ohio Environmental Protection Agency [OEPA]) to the site, located about 20 miles away in the town of Portsmouth. Using these values, exceedance of the annual PM_{2.5} standard would be unavoidable, because the background concentration already exceeds the standard (background is 24.1 µg/m³, in comparison with the standard of 15 µg/m³). The 24-hour PM_{2.5} background concentration is also quite high in comparison with the standard (i.e., background of 57.5 µg/m³, 88% of the standard of 65 µg/m³). For 24-hour PM₁₀, the background concentration is 64 µg/m³, which is 43% of the standard of 150 µg/m³. Actual particulate matter background levels closer to the site may be lower (particularly for PM₁₀) due to lower population density and vehicle traffic. However, no data are currently available for background PM levels closer to the Portsmouth site.

The assessment of construction impacts incorporated EPA's AP-42 emission factors (EPA 2002), which are based on experimental observations of a "typical" construction site and are reported as tons/acre/month. The EIS assessment used these factors assuming that at Portsmouth, 8.5 acres would be actively disturbed at one time during construction activities. This is consistent with the recommended application of the AP-42 emission factors (8.5 acres is an upper estimate of the portion of the 10-acre facility footprint expected to require grading and disturbance during construction). The total estimated emissions are given in Table 5.2-5 of the Portsmouth EIS.

The air quality approach used in the EIS employed standard EPA methodologies for estimating air quality impacts, using conservative assumptions for the purposes of NEPA. The intent was to bound potential air quality impacts given the uncertainties associated with the assessment. For example, maximum background concentrations for the last 5 years of monitoring from the nearest monitoring location were used in the assessment, as opposed to average or median values. Had average or median values been used, the 24-hour PM₁₀ would probably not exceed the standard. In addition, the entire construction area of approximately 8.5 acres within the 10-acre facility footprint was assumed to be disturbed during the construction period, and it was assumed that water spraying would only occur once or twice per day. Finally, the nearest location of public access was assumed to be 100 m from the construction site. However, since September 11, 2001, public access to the site has been restricted to the DOE property boundary located about three quarters of a mile from the construction site. Assuming that this access limitation remains in place during construction of the conversion facility, PM concentration increments at locations of potential exposure for the general public would be less than 10% of those given in Table 5.2-6 of the EIS (i.e., at 100 m from the construction site). The analyses presented in the EISs are intended to fulfill the requirements of NEPA for presenting to the public impacts that are realistic and yet conservative in nature and bounding. It may be more appropriate to employ less conservative assumptions in other types of analyses, for example, for permitting purposes. As stated above, the methodology used in the EISs is consistent with the methodology used in other NEPA documents.

Although the EIS analysis indicates that there is potential for exceedance of the PM standards during construction of the Portsmouth conversion facility, mitigation measures exist to avoid this adverse impact. For example, PM emissions in the construction area could be decreased by aggressive water spraying (3 to 4 times/day), and this would lower the emissions by an additional approximate 30%, resulting in the PM₁₀ 24-hour standard not being exceeded. Additional controls could include covering when full and at all times when in motion, open-bodied trucks transporting materials likely to become airborne; water spraying and covering bunkered or staged excavated and replacement soils; maintaining paved roads in good repair and in a clean condition; using barriers and windbreaks around construction areas; and mulching or covering exposed bare soil areas until vegetation has been established or paving has been installed. The effectiveness of controls could be demonstrated by perimeter monitoring of the construction site. With these or similar mitigation controls, and given the temporary nature of the activity, impacts would be minimized and the 24-hour PM₁₀ standard would probably not be exceeded.

COMMENTOR D0023: **Michael V. Welch, Manager, Hazardous Waste Branch**
Kentucky Division of Waste Management

Comment D0023-001

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 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.

Response D0023-001

Sections S.1.1.2 and 1.1.2 of the Draft EISs have both been modified by adding the following paragraph:

“In Kentucky, a final Agreed Order between DOE and the Kentucky Natural Resources and Environmental Protection Cabinet concerning DUF₆ cylinder management was entered on October 2, 2003. This Agreed Order requires that DOE provide the Kentucky Department of Environmental Protection an inventory of all DUF₆ cylinders for which DOE has management responsibility at the Paducah site and, with regard to that inventory, that DOE will implement the DUF₆ Cylinder Management Plan which is Attachment 1 to the Agreed Order. Performance of the Cylinder Management Plan

satisfies DOE's obligations regarding alleged violations and potential violations of hazardous waste laws and regulations that are enforceable by Kentucky."

Comment D0023-002

Section 1.1.2, Page 1-4 and 1-5: See Specific Comment #1 above. (Summary, Section S.1.1.2, Page S-S 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 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 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.)

Response D0023-002

See previous Response D0023-001.

Comment D0023-003

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.

Response D0023-003

The classified appendix was provided for review to all federal, state, and local officials who requested access to the document, had a demonstrable need-to-know, and had the proper security clearance. During the draft EIS public comment period, the classified appendix was requested and reviewed by the Tennessee Department of Environment and Conservation.

Comment D0023-004

Summary, Section S.5.2.2, Page S-31: Current UDS facility design includes the storage and use of anhydrous NH₃ for production of hydrogen for the conversion process. Conversion facility scenarios involving the accidental release of NH₃ were evaluated. However, the document states that the use of natural gas for hydrogen production is being investigated, which would eliminate the need for NH₃. 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.

Response D0023-004

The EISs have assessments of the impacts for several reasonable alternative approaches for some of the operations at the conversion plants. The reason for this is because the specific option to be implemented is currently unknown; these assessments are included to provide operational flexibility.

In the case of the hydrogen generation for use in the conversion process, the bounding impacts in each technical area from using either anhydrous ammonia or steam methane reforming (SMR) of natural gas were analyzed in the EIS. For example, the impacts from an accidental release of anhydrous ammonia are greater than from an accidental release of natural gas, so the anhydrous ammonia release was modeled. For air quality, emissions from the use of natural gas would be greater, so estimated emissions included those from natural gas use. The land area proposed by UDS for the two EISs is large enough to accommodate either hydrogen production process. Noise levels would be similar since both processes employ rotating equipment. Socioeconomic impacts would also be very similar. This method of assessing potential impacts allows flexibility for the contractor in the event that a change from the planned use of anhydrous ammonia is needed in the future.

Comment D0023-005

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.

Response D0023-005

As discussed in each site-specific EIS, DOE expects most, if not all, of the depleted uranium oxide conversion product to be shipped to a disposal facility. DOE considers disposal to be the emplacement of material in a manner to ensure its isolation for the foreseeable future. As opposed to long-term storage, disposal is generally considered permanent, with considerable and deliberate effort required to regain access to the material. Thus, the land used for a disposal facility would not be available for later use by future generations, or its use would be very limited.

DOE recognizes that it is possible that in the future the disposal facility land could be put to some alternate use, and that the disposed material could be removed from the facility and the land restored to its previous condition. However, given the nature of the material and the fact that disposal is intended to be permanent, DOE has identified the land used for a disposal facility as an irreversible and irretrievable commitment of that resource. The KDWM objection to this designation is noted.

DOE does not regard, nor intend to imply, that the designation of disposal land as an irreversible and irretrievable commitment of a resource is a limitation concerning the construction and operation of the conversion facilities.

Comment D0023-006

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.

Response D0023-006

Article 4.B(a) of the June 17, 2002, Agreement (the Agreement) between USEC and DOE provides for the transfer of “title, but not custody (until processing)” of DUF₆ generated by USEC at Paducah. While DOE will take title to this inventory, under the Agreement, USEC’s “custody” includes continued sole responsibility for cylinder management of this inventory at USEC’s sole expense and liability and under the regulatory oversight of the NRC. This custody will continue until at DOE’s sole discretion, USEC delivers the cylinders to DOE for processing in the DUF₆ conversion facility. Because these cylinders are the management responsibility of USEC, they are not included in the inventory of cylinders to which the October 2003 Agreed Order between Kentucky and DOE applies. The following has been added to the text in Section 1.1.1: “While title to the DUF₆ is transferred to DOE under this agreement, custody and cylinder management responsibility remains with USEC until DOE requests that USEC deliver the cylinders for processing in the conversion facility.”

Comment D0023-007

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 NH₃ or HF shipments. Please include consideration of risks associated with shipping UF₆ cylinders from ETTP to the selected conversion sites.

Response D0023-007

The risks associated with shipping UF₆ cylinders from ETTP to the selected conversion sites are included in each EIS. The risks from transportation of UF₆ cylinders, including routine conditions and accidents, are presented in detail in Section 5.2.5 of each document. The assessment shows that the potential consequences of an accident involving DUF₆ cylinders during transport from ETTP are lower than the consequences of an accidental release of NH₃ or aqueous hydrogen fluoride during shipment. Text has been added to Section 2.4.2.3 to indicate where in each document UF₆ cylinder accidents are discussed in detail.

Comment D0023-008

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.

Response D0023-008

The text has been revised to state “In 2000, the maximum uranium concentration was 0.09 mg/L (about 62 pCi/L) (DOE 2001b). This value is below the derived concentration guide (DCG) of 600 pCi/L.”

Comment D0023-009

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.

Response D0023-009

A footnote has been added to Table 5.1-1 of the Paducah EIS, stating that the presented planned average annual frequencies of activities for 2003–2007 are consistent with the requirements of the Agreed Order, except that the Agreed Order does not include requirements for painting.

Comment D0023-010

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.

Response D0023-010

Section 5.2.1.4.1 of the Paducah EIS and Section 5.2.2.4 of the Portsmouth EIS have been revised to indicate that there would not be any water releases to any surface water bodies during the construction of the conversion facilities. Therefore, there would be no potential impacts to surface waters.

Comment D0023-011

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 PM_{2.5}. Elaborate on emission control methods, operational restrictions, or monitoring that will be implemented to assure that the NAAQS are not exceeded.

Response D0023-011

Although the EIS analysis indicates that there is potential for exceedance of the PM standards during construction of the Paducah conversion facility, mitigation measures exist to avoid this adverse impact. For example, PM emissions in the construction area could be decreased by aggressive water spraying (3 to 4 times/day). Additional controls could include covering when full and at all times when in motion, open-bodied trucks transporting materials likely to become airborne; water spraying and covering bunkered or staged excavated and replacement soils; maintaining paved roads in good repair and in a clean condition; using barriers and windbreaks around construction areas; and mulching or covering exposed bare soil areas until vegetation has been established or paving has been installed. The effectiveness of controls could be demonstrated by perimeter monitoring of the construction site. With these or similar mitigation controls, and given the temporary nature of the activity, impacts would be minimized and the PM standards would probably not be exceeded.

Comment D0023-012

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.

Response D0023-012

On the basis of updated data from the conversion contractor (UDS 2003), the text in Section 5.2.2.4.1 of the Paducah EIS has been changed to indicate that 4,000 gal/d of process wastewater and 31,000 gal/d of cooling tower blowdown would be produced during operations. These wastewaters would not contain radionuclides and could be disposed of to the existing process wastewater treatment system, or discharged under a KPDES permit, or treated and reused at the conversion facility. Impacts to surface waters from wastewater discharge would be negligible.

The Paducah site is located about 3.5 mi from the Ohio River. The nearest surface water to sites A, B, and C is about 1/4 to 1/2 mi (Bayou or Little Bayou Creek). If the entire volume of process wastewater and cooling tower blowdown generated during 1 day (35,000 gal) was lost at one time, it would be equivalent to 0.11 ac-ft (an acre-foot is the

amount of water that would cover an acre to a depth of 1 foot). Such a release would produce no measurable impacts to groundwater resources, from either a hydrological perspective or a water quality perspective, and would be very unlikely to flow overland to either creek. Because of the small associated volume of water that would be released and its composition, it was not included as one of the accidents analyzed for the EIS.

More water could potentially be released from an accident to the cooling tower. This water could contain chlorine for reducing biofilms during the cooling process and increased total dissolved solids (TDS) due to 3 cycles of concentration being used in the cooling process (UDS 2003). Cooling tower blowdown for an entire year is described as 11.3 million gal. In the event of an earthquake that ruptures the cooling towers, a total of about 20,000 gal of water would be released to the environment. This quantity of water is equivalent to approximately one-half ac-ft. As with the process water accident discussed above, the volume of water released and its composition would not produce significant impacts to the groundwater system or nearby surface water bodies. The accident was, therefore, not included in the suite of accidents analyzed in the EIS.

Comment D0023-013

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.

Response D0023-013

As discussed in Sections 1.5.2 and 3.1.4.2, the uppermost aquifer at the site is perched and consists of a discontinuous mixture of sands and clays. A fragipan frequently occurs at a depth of about 4 ft that impedes the vertical flow of infiltrating water and leads to the formation of perched water. The lower aquifer, which is a good yield aquifer, lies at a depth of about 39 ft. Flow in the upper, perched water aquifer is primarily vertically downward; no reliable horizontal gradient has been found. Vertical flow in the perched-water zone recharges the underlying lower aquifer. The permeability of the soil above the perched water ranges from about 0.2 to 2.0 in./h (Section 3.1.4.2). Once in water, the HF would disassociate into hydrogen and fluoride, forming a weak acid. The travel time for the fluoride to reach the location of the perched water would range from about 1 to 10 days for the soil conditions at Paducah. In the absence of very adverse conditions, the contaminated soil in the zone above the perched aquifer could be cleaned up before the fluoride reached the perched water, as stated in the EIS.

If cleanup was not completed in about 10 days, the fluoride could reach the zone of perched water. Assuming that all of the annual precipitation acts as recharge to the lower aquifer (approximately 49 in./yr; Section 3.1.3.1), the travel time to the lower aquifer would be about 10 years. Actual travel times for water contaminated with fluoride would be expected to be longer because of the following conservative assumptions: the fluoride infiltrates at a velocity equal to the maximum infiltration possible (a more realistic estimate would assume that recharge is approximately 10% of the annual precipitation), the fluoride is not retarded by sorption processes during transport through the perched water zone (i.e., it has a distribution coefficient of 0.0 mL/g), and it does not degrade chemically or physically during transport (e.g., the HF does not volatilize on the surface or react after disassociation with the soil matrix or dissolved chemicals in the groundwater). For more realistic conditions, the actual time for fluoride to reach the lower aquifer would likely exceed 10 years. Because cleanup of the contaminated soil and perched water could be accomplished before the fluoride reached the location of the lower aquifer, a detailed discussion of this type of accident is not warranted for the EIS.

An alternative impact of an aboveground break of the HF pipe due to an earthquake would be potential contamination of nearby surface water features. In the EIS, an earthquake was assumed to occur, and HF would be spilled onto the ground. Because the distance to the nearest surface water feature (Bayou or Little Bayou Creek) is on the order of a 1/4 mi and the site is not located in the 100-year floodplain, an analysis of impacts to surface water was not performed, assuming that cleanup would be performed of the contaminated soil near the pipe break.

The comment suggests that adverse weather could facilitate transport to nearby surface waters. Because of the physical location of the facility on the Paducah site, a significant rainfall event would be required to mobilize and transport HF from the location of the spill to either Bayou or Little Bayou Creek. Assuming that the 100-year rainfall event was sufficient to mobilize and transport the HF to the creeks, the probability of the joint event (i.e., an earthquake breaking the pipe during a 100-year rainfall event) would be very small (probability of an earthquake occurring that broke the pipe times the probability of a 100-year rainfall event). This product makes the accident scenario nearly incredible for the Paducah site. DOE believes that the risk (i.e., product of the probability of occurrence times consequence) associated with such an accident becomes very small and not warranted for analysis in the EIS.

Comment D0023-014

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.

Response D0023-014

Sanitary wastewater is wastewater derived from use by operations personnel (e.g., bathrooms, showers, drinking fountains, etc.). It can also be called domestic wastewater. The composition of this wastewater is expected to be the same as municipal sanitary wastewater.

Comment D0023-015

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.

Response D0023-015

The HF will be stored on site at each conversion facility for approximately 2 weeks or less under normal conditions and then shipped to a vendor. The storage capacity at each site is limited for HF and if the material cannot be moved, it will be converted to CaF₂ or processing will stop. The uranium oxide will also be shipped off site for reuse or disposal in a similar time frame. However, each plant has the capacity to store CaF₂ and uranium oxide for up to 6 months of production if necessary due to the interruption of transport or some other unforeseen circumstance. DOE plans to decide the specific disposal location(s) for the depleted U₃O₈ conversion product after additional appropriate NEPA review. Accordingly, DOE will continue to evaluate its disposal options and will consider any further information or comments relevant to that decision. DOE will give a minimum 45-day notice before making the specific disposal decision and will provide any supplemental NEPA analysis for public review and comment.

CaF₂ has low toxicity and reactivity, and thus presents low risks during storage. The potential risks from accidental releases of HF and U₃O₈ in storage at the conversion facilities are presented in Section 5.2.2.2 of the Paducah EIS and in Section 5.2.3.2 of the Portsmouth EIS. Risks from HF storage are minimized by keeping quantities in storage to a minimum and by using best available practices for HF storage and loading of HF for transport.

Comment D0023-016

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.

Response D0023-016

Cylinders at all three storage sites (Paducah, Portsmouth, ETTP) are similar in content. All DUF₆ cylinders were originally filled (some cylinders are only partially full) with pure DUF₆ in liquid form, which then solidified under ambient conditions. Over time, some of the uranium in the DUF₆ has decayed and daughter products have built up in the cylinders. In addition, as explained in Appendix B of both EISs, a small, but unknown number of cylinders contain a small amount of transuranics and technetium in them. Such cylinders are likely to be found at all three sites. The impacts associated with such contamination were analyzed in detail in Appendix B of the EISs. The impacts are also summarized in Sections 5.1.2.1, 5.2.3.1, and 5.2.3.2 of the Portsmouth EIS and Sections 5.1.2.1, 5.2.2.1, and 5.2.2.2 of the Paducah EIS. As indicated in those sections, the impacts associated with transuranic contamination of cylinders are relatively small compared to the impacts associated with the DUF₆ stored in the same cylinders.

Comment D0023-017

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.

Response D0023-017

To the extent known, additional information has been added to Section 5.9.5, Waste Management, of the Decontamination and Decommissioning section (Section 5.9) of each EIS that elaborates on the waste disposal process. Additional NEPA review would be required when the facilities are proposed for D&D.

Comment D0023-018

Comment withdrawn by Kentucky Division of Waste Management (Hatton 2004).

Response D0023-018

Comment withdrawn.

Comment D0023-019

The EIS proposes that if the HF conversion by-product cannot be sold to the chemical industry, it will be converted to CaF₂ for sale or disposal. Generation of large volumes of CaF₂ would have significant impacts on transportation and waste management plans. DOE has not determined whether CaF₂ would need to be disposed of as a non-hazardous solid waste, or a LLW. Additionally, DOE has not determined whether CaF₂ 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.

Response D0023-019

DOE believes that the EIS adequately addresses the issues associated with converting HF to CaF₂ in Sections 5.2.2.7, 5.2.4, and Appendix E. As indicated therein, neutralization of HF to CaF₂ would produce approximately 4,900 yd³/yr (3,780 m³/yr) of CaF₂. Section 5.2.2.7 states that, if this CaF₂ cannot be sold, it would be managed as either nonhazardous solid waste (provided that authorized limits have been established in accordance with DOE Order 5400.5) or LLW. As nonhazardous solid waste, this volume of CaF₂ would represent an increase of approximately 20% in the projected annual Paducah site generation rate. It could be disposed of in a commercial nonhazardous waste landfill, or if it is considered to be DOE waste, in either a commercial or a DOE-owned nonhazardous waste landfill. The final choice of disposal location in any case would be based on applicable DOE directives and policies, available landfill capacities, cost effectiveness, and protection of public health and the environment. As LLW, the increase in projected annual Paducah site generation rate caused by this volume would be approximately 53%. These increases would have a moderate to large impact relative to site annual waste generation volumes and on-site waste management capacities. It could be disposed of in a commercial LLW landfill, or if it is considered to be DOE waste, in either a commercial or a DOE-owned LLW landfill. The final choice of disposal location in any case would be based on applicable DOE directives and policies, available landfill capacities, cost-effectiveness, and protection of public health and the environment. Impacts associated with transportation of CaF₂ product to either the Envirocare of Utah (a commercial facility) or NTS (a DOE facility) are presented in Section 5.2.3 of the Paducah EIS and Section 5.2.5 of Portsmouth EIS.

Comment D0023-020

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.

Response D0023-020

The DOE responses to all comments received on the “Programmatic EIS for Alternative Strategies for the Long-Term Management and Use of Depleted UF₆” are publicly available in Volume 3, Responses to Public Comments, of the PEIS (DOE 1999). The comments submitted by the KDWM are listed under Commentor No. 75 in Volume 3 (page 2-101).

The KDWM comments (Commentor 75) and DOE responses provided in Volume 3 of the PEIS were reviewed with respect to relevance to the current proposed action. Based upon this review, it was determined that either (1) the comment was not applicable to the current proposed action (e.g., comments referring to PEIS assumptions) or (2) the comment was applicable to the current proposed action and that the DOE response was still appropriate. Consequently, the KDWM comments and DOE responses were not repeated in this Comment Response Document.

Comment D0023-021

The EIS should be expanded to discuss the potential to accept DUF₆ 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 cylinders. In addition, specify where additional cylinders would be stored in the event that cylinders are transported from ETTP to Paducah for conversion.

Response D0023-021

At the present time, there are no plans or proposals for DOE to accept DUF₆ cylinders for conversion beyond the current inventory for which it has responsibility. However, Section 2.2.7 of the Portsmouth EIS and Section 2.2.5 of the Paducah EIS discuss a number of possible future sources of additional DUF₆ that could require conversion, including receiving additional cylinders from USEC. The potential environmental impacts associated with expanding plant operations (including extending plant operations and increasing plant throughput) to accommodate processing of additional cylinders are discussed in Section 5.2.8 of the Portsmouth EIS and Section 5.2.6 of the Paducah EIS.

Because of the uncertainty associated with possible future sources of DUF₆ for which DOE could assume responsibility, there is no current proposal to increase the throughput of the conversion facilities or extend operations. However, for purposes of the EIS, it was assumed that the Portsmouth conversion process building would be designed and built with sufficient space to accommodate an increased plant throughput sometime in the future. The modular design of the dry conversion process — the Portsmouth and Paducah facilities are being designed with three and four parallel conversion lines, respectively — facilitates process expansion. In addition to the potential impacts associated with expanded plant operations, Section 5.2.8 of the Portsmouth EIS also discusses potential impacts that would be associated with a conversion facility consisting of four process lines rather than three. If a decision is made in the future to increase the number of parallel process lines beyond four at either site, additional NEPA review would be conducted.

With respect to the possible conversion of the ETTP cylinders at the Paducah site, potential transportation impacts and impacts associated with extended Paducah conversion plant operations are presented in Section 5.2.5 of the Paducah EIS. The impacts discussed in this section include impacts associated with the receipt, surveillance, and maintenance of the ETTP cylinders at the Paducah site, transfer of the ETTP cylinders to the conversion plant, and extending conversion plant operations for the necessary 3 years. However, because the proposed action and current DOE plans call for the shipment of the ETTP cylinders to the Portsmouth site, no specific location at Paducah has been identified for storage of the ETTP cylinders. As noted in Section 5.2.5, if it was decided to transport the ETTP cylinders to Paducah and it was determined that a new cylinder yard was required, additional NEPA review would be conducted.

Comment D0023-022

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.

Response D0023-022

DOE indicates its use of a 25-mrem/yr dose constraint for controlling anticipated exposures to members of the public from each DOE source or practice in Section 3.1.2, "Implementation Guide, Control and Release of Property with Residual Radioactive Material for Use with DOE 5400.5, Radiation Protection of the Public and the Environment," DOE G 441.1-XX (draft), which is available on the Internet at the following URL address: <http://www.directives.doe.gov/pdfs/doe/doetext/draftord/441/g4411-xx.pdf>.

The International Commission on Radiological Protection (ICRP) developed the concept of dose constraints for circumstances in which people may be exposed to radiation from several different sources. In such cases, the ICRP recommends that regulatory agencies establish an upper restriction on the anticipated dose that an average individual member of the public may receive from a single source in order to ensure that the actual dose to any individual member of the public would not exceed the legal dose limit from all sources (e.g., 100 mrem/yr from all sources and pathways in the case of dose to a member of the public in the United States). Such an upper restriction is referred to as a dose constraint. For a discussion of the conceptual framework for radiological protection recommended by the ICRP, the following URL address may be consulted: http://www.nrp.org/publications/documents_of_nrp/abstracts/absd4-1.htm.

Please note that, in the case of HF or CaF₂ releases from the proposed DUF₆ conversion facility, even if an alternative set of release limits were to be demonstrated to comply with the dose constraint of 25 mrem/yr, that demonstration alone would not qualify the alternative set of release limits to be authorized limits. Instead, several alternative sets of release limits that have been demonstrated to comply with the dose constraint would need to be evaluated using the ALARA (as low as reasonably achievable) process. The purpose of the evaluation would be to identify the one alternative set of release limits that would yield exposures to members of the public as far below 25 mrem/yr as practicable, taking into account technological, economic, safety, environmental, social, and public policy factors. This set of release limits would then qualify for possible approval by DOE as authorized limits.

Comment D0023-023

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 Commission (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.

Response D0023-023

Comment noted. The Framatome ANP facility mentioned in Section E.4.1 generates HF and sells it commercially for unrestricted use. The amount of residual radioactive material allowed in the HF released from the Framatome ANP facility is governed by the facility's NRC license. If UDS decides to release HF and/or CaF₂ from the proposed DUF₆ conversion facilities for unrestricted use, DOE (rather than NRC) must establish authorized limits for the maximum concentrations of residual radioactive material allowed to remain volumetrically distributed within the released HF and CaF₂. The process by which DOE will establish such authorized limits is described in Section E.4 of each EIS.

COMMENTOR D0024:**Edward S. Ford, Chairman**Central Midwest Interstate Low-Level Radioactive Waste
Commission**Comment D0024-001**

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 DUF₆ 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.

Section 2.2.4 of the DEIS's states "It is unknown how many DUF₆ 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 DUF₆ 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 required to render the East Tennessee Technical Park (ETTP) cylinders roadworthy or the need to seek a variance from DOT.

Response D0024-001

In its ROD for the Programmatic EIS, DOE stated that it would use depleted uranium oxide generated by the conversion facilities to the extent possible, and store or dispose of the remainder (see Section S.1.1.3 of the EISs). Therefore, the U₃O₈ is considered to have a potential for use and is not necessarily a waste.

Text to indicate that the PEIS cylinder preparation assessment evaluated from half to all of the DUF₆ cylinders not meeting DOT shipping requirements has been added to Section 2.2.4 of each of the EISs.

Comment D0024-002

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 DUF₆ and UF₆ shipments from the ETTP to either Portsmouth or Paducah, possible DUF₆ shipments from Paducah to Portsmouth, and possible DUF₆ shipments from a yet to be developed enrichment facility to one or both of the conversion facilities.

Response D0024-002

The two site-specific conversion facility EISs include evaluation of the risks associated with the transportation of radioactive and hazardous materials, including depleted uranium hexafluoride, depleted uranium oxide, hydrogen fluoride, and anhydrous ammonia. In the Portsmouth EIS, potential transportation impacts are discussed in Sections 5.2.5 and 5.2.7. In the Paducah EIS, transportation impacts are discussed in Sections 5.2.3 and 5.2.5. The transportation assessment includes evaluation of risks incurred during normal operations, as well as risks from accidents. The assessment considers both vehicle-related risks (i.e., risks related to vehicle operation, such as the potential for accidents causing injuries and fatalities) and cargo-related risks.

With respect to the potential impacts to first responders, the transportation accident assessment includes the evaluation of impacts to both the population living within 50 mi (80 km) of an accident site as well as to a MEI assumed to be exposed in the immediate vicinity of an accident. These receptors are assumed to be exposed to the passing plume of released material and to be unshielded and without protective equipment. Consequently, the impacts presented for the MEI represent an upper bound estimate of the risk posed to a first responder.

Comment D0024-003

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?

Response D0024-003

In order to not underestimate the impacts from chemical and radiological release scenarios considered in these EISs, it was assumed that minimal available emergency response measures would be used to mitigate the impacts from the postulated releases. With respect to the potential impacts to first responders, the transportation accident assessment includes the evaluation of impacts to both the population living within 50 mi (80 km) of an accident site as well as to an MEI assumed to be exposed in the immediate vicinity of an accident. These receptors are assumed to be exposed to the passing plume of released material and to be unshielded and without protective equipment. Consequently, the impacts presented for the MEI represent an upper bound estimate of the risk posed to a first responder.

DOE maintains and operates an active training program dealing with first response to a transportation accident involving radioactive materials. This program, the TEPP, has conducted or provided technical support to numerous training programs in the three states hosting DOE facilities handling UF₆ — Kentucky, Tennessee, and Ohio. TEPP works actively with the Kentucky Division of Emergency Management, the Radiation Health and Toxic Agents Branch of the Kentucky Department for Public Health, the Tennessee Emergency Management Agency, and the Ohio Emergency Management Agency within the Ohio Department of Public Safety to ensure that first responder training concerns are met within this three-state area.

Because there is an extensive shipping history and significant ongoing shipping activities among these three facilities, the state agencies have a high level of awareness regarding the hazards associated with UF₆. TEPP staff members are committed participants in the emergency management and response community and plan to continue to support first responder readiness throughout these three states.

Comment D0024-004

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 and UF 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.

Response D0024-004

See Response to Comment D0024-003.

Comment D0024-005

The DOE should also schedule the DUF₆ and UF₆ 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.

Response D0024-005

A Transportation Plan is developed for each shipping program related to the DUF₆ conversion facility program. Each Plan is developed to address specific issues associated with the commodity being shipped, the origin and destination points, and concerns of jurisdictions transited by the shipments. Decisions on matters such as convoys are developed with comment and input from all affected agencies and take into consideration factors such as safety, security, efficiency, and regulatory requirements. Security issues associated with hazardous materials transportation have recently been accorded a higher priority, and DOT has enacted specific requirements to enhance the security of hazardous materials in commerce. These enhanced measures are addressed, to the extent appropriate in a public document, in the applicable Transportation Plan. In all cases, DOE-sponsored shipments will comply with all applicable state and federal regulations and will be reflected in many of the operational decisions to be made and presented in the Plan.

Comment D0024-006

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.

Response D0024-006

As stated in Section 2.2.4 of both EISs, at this time it is unknown exactly how many of the DUF₆ cylinders at ETTP do not meet DOT transportation requirements. The DUF₆ programmatic EIS assessment for cylinder preparation for shipment evaluated from half to all of the DUF₆ cylinders at ETTP not meeting DOT shipping requirements, but this was an assumption made for the purposes of analysis. Prior to shipment of any cylinder from ETTP, the cylinder would receive a thorough inspection, including a record review to determine if the cylinder is overfilled, a visual inspection for damage or defects, a pressure check to determine if the cylinder is overpressurized, and an ultrasonic wall thickness measurement (if necessary based on the visual inspection).

The two site-specific conversion EISs identify three possible options for shipping cylinders that do not comply with DOT requirements for the shipment of UF₆: (1) transferring the contents to compliant cylinders (likely requiring a new facility); (2) obtaining an exemption from DOT to ship the cylinders “as is,” provided that DOE can demonstrate a level of safety that would be at least equal to the level required by the regulations; and (3) transporting the cylinders in a protective overpack. At present, a transportation plan for shipment of noncompliant cylinders has not been finalized and DOE is evaluating the available options. Consequently, the EISs provide an evaluation of these options.

It should be noted that all shipments must be made in compliance with DOT regulations, regardless of the specific approach selected. A Transportation Plan will be developed for each shipping program related to the DUF₆ conversion facility program. Each Plan will be developed to address specific issues associated with the commodity being shipped, the origin and destination points, and concerns of jurisdictions transited by the shipments. In all cases, DOE sponsored shipments will comply with all applicable state and federal regulations and will be reflected in many of the operational decisions to be made and presented in the Plan.

COMMENTOR D0025: **Mitch McConnell**
United States Senator, Kentucky

Comment D0025-001

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 hexafluoride (DUF₆) 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.

Response D0025-001

Comment noted.

Comment D0025-002

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 DUF₆. Congress has directed DOE to process this DUF₆ into material more suitable for long-term storage, use, or disposal. This will remove from Paducah the existing DUF₆ inventory, which currently poses significant inspection, maintenance, and security challenges.

Response D0025-002

Comment noted.

Comment D0025-003

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 DUF₆ Conversion Facility by the deadline mandated by Congress.

Response D0025-003

DOE is committed to finalizing the two site-specific EISs and issuing the RODs in order to begin construction by the Congressionally mandated date of July 31, 2004.

COMMENTOR D0026: **Kenneth A. Westlake**
 U.S. Environmental Protection Agency, Region 5

Comment D0026-001

The Final EIS should indicate that environmental restoration activities at the Portsmouth Gaseous Diffusion Plants (PORTs) are governed by three Administrative Consent Orders: 1) the 1989 Ohio EPA Consent Decree; 2) the 1997 Three Party Administrative Order on Consent (U.S. EPA, Ohio EPA and DOE); and 3) the 1999 Ohio EPA Administrative Order for Integration. A summary and overview of these and other legal orders relevant to PORTs should be provided.

Response D0026-001

Section 3.1 in the Portsmouth DEIS has been modified by adding the following paragraphs: “The Portsmouth site is not listed on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priorities List. Investigation and cleanup of hazardous substances (as defined in CERCLA) and hazardous wastes (as defined in the Resource Conservation and Recovery Act [RCRA]) that have been released to air, surface water, groundwater, soils, and solid waste management units as a result of past operational activities at the Portsmouth site are being conducted under the provisions of the following administrative edicts, which have been issued pursuant to RCRA, CERCLA, and/or Ohio state law:

- State of Ohio v. U.S. Department of Energy, Divested Atomic Corporation, et al., Consent Decree. Civil Action C2-89-732. August 31, 1989 (referred to as the 1989 Ohio Consent Decree). The 1989 Ohio Consent Decree addresses certain hazardous waste compliance issues at the Portsmouth site and requires the performance of corrective actions in addition to other requirements.

- In the Matter of United States Department of Energy: Portsmouth Gaseous Diffusion Plant, Administrative Consent Order. U.S. Environmental Protection Agency (EPA) Administrative Docket No. OH7 890 008 983. August 12, 1997 (agreement between DOE, EPA, and Ohio EPA) (referred to as the 1997 Three-Party Administrative Consent Order). The 1997 Three-Party Administrative Consent Order replaced a prior EPA Administrative Consent Order, which was issued during 1989 and amended in 1994, and defines oversight roles at the Portsmouth site for the Ohio EPA and EPA with respect to corrective action/response action activities. It also defines certain cleanup performance obligations for DOE.
- In the Matter of United States Department of Energy and Bechtel Jacobs Company LLC, Director's Final Findings and Orders. March 17, 1999 (referred to as the 1999 Ohio Integration Order). The 1999 Ohio Integration Order integrates the closure requirements for specified units at the Portsmouth site as established under the 1989 Ohio Consent Decree, the Ohio Administrative Code, and the 1997 Three Party Administrative Consent Order. The purpose of this integration is to avoid duplication of effort, and efficiently perform site-wide groundwater monitoring and surveillance and maintenance activities at the Portsmouth site.”

Comment D0026-002

On January 12, 2004, USEC, Inc., announced that a new American Centrifuge uranium enrichment plant (ACEP) will be constructed and operated at Portsmouth. The summary section of the Final EIS should address the potential cumulative effects of that new plant will have on the overall environmental impacts of the DUF₆ facility.

Response D0026-002

The cumulative impacts analysis included in both the draft and final Portsmouth conversion facility EIS assumed that a new USEC centrifuge enrichment facility would be constructed and operated at the Portsmouth site (see Sections S.5.16 and 5.3.2). As stated in Section S.5.16, the analysis assumed that such a plant would be sited at Portsmouth, that the existing DOE gas centrifuge technology would be used, and that the environmental impacts of such a facility would be similar to those outlined in a 1977 EIS for Expansion of the Portsmouth Gaseous Diffusion Plant that considered a similar action (ERDA 1977).

The 1977 EIS was used because it evaluated construction and operation of an 8.8 million separative work unit gas centrifuge enrichment facility at Location B of the Portsmouth site, compared to the currently proposed 3.5 million separative work unit USEC facility. Note that the centrifuge facility proposed in 1977 was never completed, so operational data are not available for estimating environmental impacts. It should be noted that the NRC licensing activities for the proposed centrifuge enrichment plant will include preparation of an environmental impact statement that must also evaluate cumulative

impacts at the Portsmouth site. The centrifuge enrichment facility cumulative impacts analysis will be based on the anticipated USEC enrichment facility design, which does not currently exist, and benefit from the detailed evaluation of conversion facility impacts presented in this EIS.

The text of Section S.5.16 has been revised to indicate that USEC announced in January 2004 that it had selected Portsmouth as the site for its centrifuge enrichment facility.

Comment D0026-003

If the conversion facility will have a role beyond processing the current inventory of DUF₆ and non-DUF₆ cylinders, the final EIS should address the conversion facility's potentially longer operation period and processing capacity. The EIS should also address the potential for facility upgrades that would accommodate increased processing capacity should the need arise. The concern is whether the EIS is comprehensive enough to accommodate future upgrades to the conversion facility, without having to revisit the NEPA process again.

Response D0026-003

At the present time, there are no plans or proposals for DOE to accept DUF₆ cylinders for conversion beyond the current inventory for which it has responsibility. However, Section 2.2.7 of the Portsmouth site-specific conversion facility EIS (Section 2.2.5 of the Paducah EIS) discusses a number of possible future sources of additional DUF₆ that could require conversion. The potential environmental impacts associated with expanding plant operations (including extending plant operations and increasing plant throughput) to accommodate processing of additional cylinders are discussed in Section 5.2.8 of the Portsmouth EIS and Section 5.2.6 of the Paducah EIS.

Because of the uncertainty associated with possible future sources of DUF₆ for which DOE could assume responsibility, there is no current proposal to increase the throughput of the conversion facilities or extend operations. However, for purposes of the EIS, it was assumed that the Portsmouth conversion process building would be designed and built with sufficient space to accommodate an increased plant throughput sometime in the future. The modular design of the dry conversion process — the Portsmouth and Paducah facilities are being designed with three and four parallel conversion lines, respectively — facilitates process expansion. In addition to the potential impacts associated with expanded plant operations, Section 5.2.8 of the Portsmouth EIS also discusses potential impacts that would be associated with a conversion facility consisting of four process lines rather than three. If a decision is made in the future to increase the number of parallel process lines beyond four at either site, additional NEPA review would be conducted.

Comment D0026-004

Disposal facilities each have unique waste acceptance criteria (WAC) that dictate what can be accepted for disposal. For what is currently known about the two representative disposal facilities (Envirocare and NTS - Nevada Test Site), and the anticipated profiles of the conversion products (depleted U₃O₈, CaF₂, emptied cylinders), the Final EIS should describe the level to which DOE is confident that the representative disposal facilities have both the WAC limits and the physical capacity to accept what will be an enormous quantity of conversion product waste.

Response D0026-004

As Section 1.6.2.4 in the EIS states, studies conducted by ORNL for DOE have shown that both NTS (a DOE facility) and Envirocare of Utah, Inc. (a commercial facility) would be acceptable disposal facilities for depleted uranium (Croff et al. 2000a,b). These studies included reviews of the LLW acceptance programs and disposal capacities of both the NTS and Envirocare of Utah, Inc. and concluded that either facility would have the capacity needed to dispose of all the products from the proposed DOE DUF₆ conversion program, and that the materials sent to these facilities would be able to meet each site's waste acceptance criteria. Additionally, in its proposal to design, construct, and operate the DUF₆ conversion facilities, UDS provided evidence that both sites could accept the U₃O₈ and identified the Envirocare facility as the primary and NTS as the secondary disposal site. DOE plans to decide the specific disposal location(s) for the depleted U₃O₈ conversion product after additional appropriate NEPA review. Accordingly, DOE will continue to evaluate its disposal options and will consider any further information or comments relevant to that decision. DOE will give a minimum 45-day notice before making the specific disposal decision and will provide any supplemental NEPA analysis for public review and comment.

Comment D0026-005

The Draft EIS suggested that 2,200 railcar shipments could be sent to NTS. Rail access to NTS and its existing disposal areas currently does not exist. The Final EIS should offer additional discussion of the transportation process and related impacts.

Response D0026-005

The transportation assessment for the shipment of depleted uranium conversion products for disposal considers several options. The proposed disposal site is the Envirocare facility (a small number of empty cylinders may require disposal at NTS). For shipments to Envirocare, rail is evaluated as the proposed mode and truck is evaluated as an alternative. In addition, the NTS is considered as an alternative disposal site. For this alternative, both truck and rail modes are evaluated, although neither is currently proposed.

For assessment of the rail option to NTS, it has been assumed that a rail spur is built in the future providing rail access to the NTS. Currently, the nearest rail terminal is about

70 miles from NTS. If a rail spur is not available in the future and NTS was selected as the disposal site, shipments could be made by truck, or rail could be used with an intermodal transfer to trucks at some place near the NTS (transportation impacts for the intermodal option would be slightly greater than those presented for rail assuming NTS rail access, but less than those presented for the truck alternative). If a rail spur were built to the NTS, additional NEPA review would be required.

Additional information has been added to the transportation section to clarify the assumption concerning NTS rail access.

Comment D0026-006

When regulatory compliance assurances are provided throughout this document, the Radionuclide National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Radionuclide Emissions for United States Department of Energy (USDOE) Owned or Operated Facilities, found at 40 CFR 61, Subpart H, are not always adequately identified. This outside oversight and compliance demonstration helps to provide the public with the knowledge they are adequately protected under this regulation as long as compliance can be clearly demonstrated.

Response D0026-006

In Chapter 6 of the EISs (regulatory requirements), Table 6.1 identifies that the conversion facility is subject to the requirements of 40 CFR 61, Subpart H. Similarly, compliance with 10 CFR 61 requirements is explicitly identified in the EIS human health and safety sections for the no action alternative (Section 5.1.2.1.1) and for the action alternatives (Section 5.2.3.1.1).

In the final EIS, text has been added to the human health and safety sections of the summary (Section S.5.1) and the comparison of alternatives (Section 2.4.2.1) to clearly identify that the assessment results were in compliance with regulatory requirements, including those of 40 CFR 61, Subpart H.

Comment D0026-007

Measurement of parameters in calculations and models cited must be in consistent units to avoid confusion and to better assess the conservatism and adequacy of the methodologies used for evaluating the relative risks for this project.

Response D0026-007

DOE attempted to use consistent units throughout the EISs, although some errors may exist. For example, environmental measurements of radionuclide and chemical concentrations in air, water, and soil are given in the same units as the regulatory or guideline values. Where errors (or inconsistencies) were identified in the draft EISs, these have been corrected for the final EISs.

Comment D0026-008

U.S. EPA rates “A,” the preferred alternative, EC-2, Environmental Concerns - Insufficient Information. Please see the enclosure for a description of the U.S. EPA’s ratings. An EC-2 rating indicates that our review has identified potential impacts of the proposal that should be avoided to fully protect the environment, and that more information should be provided to fully assess the impacts of the proposal. Our detailed comments are included in an additional enclosure.

Response D0026-008

The U.S. EPA concerns are noted. DOE has addressed the detailed comments with the intent of providing the U.S. EPA with sufficient information to fully assess the impacts of the proposal.

COMMENTOR D0027: **T. Michael Taimi, Director, Environmental Affairs**
United States Enrichment Corporation Inc.

Comment D0027-001

As a general comment, United States Enrichment Corporation (USEC) and the DOE-PORTS office have worked together to address issues at the Portsmouth Gaseous Diffusion Plant (PORTS) for more than 10 years. They coordinate many of their activities to assure appropriate site reporting and response to the various environmental authorities. This close coordination has benefited both DOE and USEC and has assured compliance with applicable environmental requirements. We would be glad to arrange for a meeting at PORTS to discuss the impacts the UDS Conversion Facility may have upon other activities at PORTS and to include those facilities in our coordination of activities affecting the site.

As a general comment, United States Enrichment Corporation (USEC) and the DOE-GDP office have worked together to address issues at the Paducah Gaseous Diffusion Plant (PGDP) for more than 10 years. They coordinate many of their activities to assure appropriate site reporting and response to the various environmental authorities. This close coordination has benefited both DOE and USEC and has assured compliance with applicable environmental requirements. We would be glad to arrange for a meeting at PGDP to discuss the impacts the UDS Conversion Facility may have upon other activities at PGDP and to include those facilities in our coordination of activities affecting the site.

Response D0027-001

DOE appreciates the close coordination with USEC concerning compliance with applicable environmental requirements at the Portsmouth and Paducah sites and looks forward to continued cooperation in the future.

Comment D0027-002

Section 2.5 - USEC concurs with the DOE's preferred location (Location A) to construct and operate the proposed DUF₆ conversion facility.

Response D0027-002

Comment noted.

Comment D0027-003

General Comment - Reference to any USEC Advanced Technology siting decisions for the American Centrifuge need to reflect that the siting decision has been made and that PORTS has been selected.

Response D0027-003

The two site-specific conversion facility EISs have been revised to reflect that USEC announced in January 2004 that it had selected Portsmouth as the site for its centrifuge enrichment facility.

Comment D0027-004

Section 3.1.3.2 - The Title V air permit for USEC operations has been issued and was effective August 21, 2003.

Response D0027-004

The text of Section 3.1.3.2 of the Portsmouth EIS has been revised to reflect that the Title V air permit has been issued.

Comment D0027-005

Table 6.1 States: "The DUF₆ conversion facility would not discharge industrial process wastewater. Therefore, an NPDES Permit for Process Water Discharge would not be required." It is possible that a facility with a wet scrubber, water-cooled heat exchangers, and water spray cooling may have a process wastewater stream. Sanitary water use from daily activity and shower rooms will require discharge through a NPDES permitted treatment process such as the onsite USEC operated process. It is likely that UDS will be required to obtain a NPDES permit that will require an internal monitored outfall before discharging into the USEC X-6619 permitted sewage treatment plant.

Response D0027-005

The quoted item in Table 6.1 has been modified to read as follows: UDS is studying options for management of process water/blowdown discharges. The need for an NPDES

permit for such discharges will be determined based on the outcome of the study. If it is determined that an NPDES permit is required, UDS will apply for the permit at the appropriate time.

Comment D0027-006

Section 3.1.6.2 states “greater biological diversity exists upstream of the plant discharges than downstream.’ This is not consistent with the following Ohio EPA reports that state: “aquatic habitat quality in Little Beaver Creek declines upstream of PORTS discharges due to low and/or intermittent water flow.”

- Biological, Fish Tissue and Sediment Quality in Little Beaver creek Big Beaver Creek. Big Run Creek and West Ditch, Piketon Ohio. May 24, 1993, OEPA Technical Report EAS/1993-5-2
- Biological and Water Quality Study of Little Beaver Creek and Big Beaver Creek— 1997, June 4, 1998, OEPA Technical Report MAS/1998-5-1

Response D0027-006

The text of Section 3.1.6.2 of the Portsmouth EIS has been changed to include the updated EPA data.

Comment D0027-007

General Comment: There is no specific reference as to how waste material with radionuclides other than uranium will be addressed. In particular, heels material is likely to contain TRU, and long-lived thorium isotopes (Th-228, Th-230, and Th-232). The EIS needs to address containment and contamination control of this material.

Response D0027-007

Impacts associated with potential transuranic and technetium contamination of DUF₆ cylinders, both in bulk and in heels, at the three storage sites are discussed in detail in Appendix B of both the Portsmouth and Paducah EISs. The impacts are also summarized in Sections 5.1.2.1, 5.2.3.1, and 5.2.3.2 of the Portsmouth EIS and Sections 5.1.2.1, 5.2.2.1 and 5.2.2.2, of the Paducah EIS. The discussion includes potential generation and management of transuranic waste at the conversion facilities. As indicated in those sections, the impacts associated with transuranic and technetium contamination of cylinders are relatively small compared with the impacts associated with the DUF₆ stored in the same cylinders. Short-lived thorium isotopes that are produced from the decay of uranium isotopes are included in the assessment of impacts. There are not enough long-lived thorium isotopes in the cylinders to warrant special consideration. In addition, on a per unit mass basis, their impacts should be comparable to the impacts from U-238.

Comment D0027-008

General Comment: There is no specific reference to how Radionuclide NESHAPS will be implemented. UDS needs to consider how they will quantify their radionuclide emissions and how they will coordinate their annual reporting with other site residents. Currently the Radionuclide NESHAPS dose limit applies to the site as a whole. If UDS pursues a “go it alone” approach, then USEC and DOE will be UDS’s public and UDS will be USEC and DOE’s public for whom dose needs to be determined.

Response D0027-008

UDS will quantify their radionuclide emissions through sampling and monitoring of the stack effluents and will cooperate with other DOE tenants on the site regarding submission of a site-wide Radionuclide NESHAPS report. The quantities of radioactive materials released from the depleted UF₆ conversion facility will be incorporated into the site-wide report.

Comment D0027-009

Table 6.1 States: “UDS will prepare and submit an Annual Hazardous Chemical Inventory Report each year, if hazardous chemicals have been stored at the DUF₆ conversion facility site in amounts that exceed threshold quantities during the preceding year.” Chemical threshold quantities are derived from the aggregate of all Reservation residents. Currently DOE provides USEC a monthly chemical inventory list of materials managed by various DOE Sub-Contractors resident on site. USEC compiles the lists monthly to determine if a threshold quantity has been exceeded. USEC then files the Annual Hazardous Chemical Inventory Report for the site.

Response D0027-009

The quoted item in Table 6.1 has been modified to read as follows: “UDS will cooperate with other DOE tenants on the Portsmouth Gaseous Diffusion Plant (PORTS) site regarding submission of a site-wide Annual Hazardous Chemical Inventory Report each year. The quantities of hazardous chemicals stored at the depleted UF₆ conversion facility will be incorporated into the site-wide report.”

Comment D0027-010

HF production is discussed in several areas but emissions are not addressed. USEC’s current air pollution permit contains limits on HF emissions that utilize the full allocation for the site. The EIS should address how HF emissions are to be treated or include a zero emission plant design.

Response D0027-010

Because HF monitoring at the Paducah gaseous diffusion plant (GDP) was discontinued in the early 1990s, the most current available background level was from around that time, and was used for the EIS analysis (Argonne National Laboratory [ANL] 1991).

Therefore, the background level did include operation of the USEC gaseous diffusion plant, although throughput levels may have changed since that time. Background values were available for one week and annual averaging periods. For the revised EIS analysis, the highest available weekly and annual background levels were used to estimate the background values for other averaging times. The information on the source of the HF background values has been added to the final EIS.

Emissions of HF from the Paducah conversion facility were described in Section 5.2.2.3 of the DEIS. Based on updated facility design information provided by the conversion facility contractor, emissions and estimated ambient levels have been revised for the FEIS. A comparison of HF levels with secondary HF standards has also been added. The emissions result in ambient HF levels much lower than both primary and secondary air quality standards. For example, conversion facility HF emissions would result in 24-hour ambient HF concentrations of up to 0.09 µg/m³, which corresponds to about 3.1% of the Commonwealth of Kentucky's secondary ambient air quality standard. For other secondary standards (e.g., 12-hour, 1-week, and 1-month), predicted maximum concentration increments would be less than 4% of their respective standards. Predicted annual maximum concentration increments and total concentrations would be several orders of magnitude lower than the primary standards.

With background included, all the total maximum concentrations would still be well below their corresponding standards. For example, the total 24-hour maximum concentration would be less than 35% of the secondary standard, whereas the total maximum concentrations for the 12-hour, 1-week, and 1-month averaging times would be less than 43% of their secondary standards.

Emissions of HF from USEC operations are considered in the air permit application that has been submitted for the conversion facility. It is anticipated that the fence line HF concentrations will be below all applicable air quality criteria, even when considering emissions from both the conversion facility and USEC.

Comment D0027-011

There is no specific reference as to how waste material that includes radionuclides and long-lived thorium isotopes other than uranium will be handled, USEC experience indicates transuranics and technetium may remain in the heel material after transfer of UF from the cylinder, especially in cylinders that were previously used for handling of reactor returns. The EIS should address waste material containing transuranics and technetium.

Response D0027-011

Please see Response D0027-007.

Comment D0027-012

There is no specific reference to how radionuclide NESHAPs will be implemented. Currently radionuclide NESHAPs dose limit applies to the site as a whole. If UDS pursues a stand-alone approach, then USEC and DOE will be UDS “public” and UDS will be USEC and DOE’s “public” when calculating and reporting dose to the public. The EIS should address the method of compliance with 40 CFR 61 regulations.

Reference to any USEC Advanced Technology siting decisions for the American Centrifuge should reflect that the siting decision has been made and that the Portsmouth Gaseous Diffusion Plant site has been selected.

Response D0027-012

Please see Response D0027-008.

The two site-specific conversion facility EISs have been revised to reflect that USEC announced in January 2004 that it had selected Portsmouth as the site for its centrifuge enrichment facility.

Comment D0027-013

S.5.4, Table 5.6, 3.1.3.3: The EIS indicates emissions of particulate matter from construction activities may exceed ambient air quality standards. Control measures will be applied to minimize the particulate emissions. The EIS should address any air or water quality impacts from applying the particulate matter control measures.

Response D0027-013

The amount of water that would be applied to limit dust generation during construction activities would be less than 3,000 gal/day, which would be readily available at the site. An adverse impact from water applications that could occur would be runoff from the construction site. Control measures that might be applied to limit this impact include sediment and erosion controls such as temporary and permanent seeding; mulching and matting; sediment barriers, traps, and basins; silt fences; and runoff and earth diversion dikes.

No adverse air quality impacts would be associated with the water spraying to limit particulate matter generation.

Comment D0027-014

Fig. 2.2-2: Process descriptions indicate the addition of nitrogen and ammonia to the systems but do not mention whether NO_x will be generated in significant quantities. The EIS should discuss the impact of introduction of nitrogen bearing compounds.

Response D0027-014

The use, storage, and transportation of anhydrous ammonia as part of the conversion process have been addressed throughout both the Paducah and Portsmouth EISs. In the Paducah EIS, the annual use of anhydrous ammonia is stated in Section 5.2.2.8 (Resource Requirements). The nitrogen oxide (NO_x) emissions given in Section 5.2.2.3.1 of the Paducah EIS and Section 5.2.3.3.1 of the Portsmouth EIS are conservative estimates that include NO_x that might be generated from use of either ammonia or natural gas as the hydrogen source in the process. (If ammonia were used, NO_x emissions would be negligible; if natural gas were used, emissions would be somewhat higher, so the NO_x emissions given in the air quality sections include amounts that could be generated from use of natural gas).

The nitrogen in the process is used as a purge gas to control air in-leakage into the conversion processes. It would be released to the air without any substantial conversion to nitrogen oxides or other potential pollutants. It was not included in the total NO_x emissions from conversion facility operations because the absence of oxygen in contact with the nitrogen stream at high temperatures would severely limit the potential for NO_x formation.

In the comparison of alternatives sections of the EISs, which include Figure 2.2-2 mentioned in the comment, only summary information on the process is included. Additional description of nitrogen oxide formation from use of ammonia and nitrogen in the process has been added to the “air quality during operations” sections of each EIS.

Comment D0027-015

S.5.16: The cumulative radiological exposure as compared to the DOE limit is discussed but there is no mention of exposure compared to 40 CFR 61 and 40 CFR 190 limits. The EIS should discuss compliance with EPA limits on radiological exposure.

Response D0027-015

The text in Section S.5.16 and in Section 5.3.2 of the EIS has been revised to state that cumulative exposures for the off-site population will be well below the limits specified in both 40 CFR Part 61 and 40 CFR Part 190.

Comment D0027-016

3.1.3.2: USEC does not have a Title V Permit. Sentence should be revised to so indicate.

Response D0027-016

The text has been revised to indicate that the Paducah site does not have a Title V Permit.

Comment D0027-017

3.1.9, 5.3.2: USEC does not manage the DOE DUF₆ cylinders and therefore does not handle waste generated from those processes. Delete these references.

Response D0027-017

The text has been changed to indicate that DOE manages the wastes associated with cylinder management.

Comment D0027-018

5.2.1.4.1: The EIS indicates water is used during construction and that wastewater will be treated at the wastewater treatment plant. The wastewater treatment plant is not shown in process schematics. The EIS should be specific on where the wastewater will be treated and indicate on process drawing.

Response D0027-018

The text has been changed to indicate that portable toilets would be used to accommodate sanitary wastewater during construction. Therefore, no wastewater would be sent to the wastewater treatment plant.

During normal operations, wastewater might be sent to the wastewater treatment plant. However, at this time, a final plan for dealing with normal operations wastewater has not been finalized. Wastewater may be treated and sent to the wastewater treatment plant, not treated and sent to the wastewater treatment plant, or treated and recycled for use in the conversion facility. Any discharges would occur under appropriate KPDES permits. Because the plans for disposition of this wastewater are not complete, the process schematics are not available.

Comment D0027-019

Table 5.2-15: This Table mentions 24-hour concentrations of HF associated with operations of the facility. The KDEP standard is base on a 12-hour concentration. The EIS should discuss compliance during normal operation and during accident conditions with the KDEP 12-hour limit.

Response D0027-019

The HF concentrations for other KDEP secondary standards, including for averaging times of 12-hour, 1-week, and 1-month have been calculated. The referenced table and corresponding text for normal operation and during accident conditions have been revised as suggested. It is shown that during normal facility operations, the maximum short-term (less than or equal to 1-month) HF concentration increments and total (project increment plus background) concentrations would be about 3.8% and 42.8% of the KDEP

standards, respectively. The annual HF concentrations would be several orders of magnitude lower than the KDEP primary standard.

Comment D0027-020

Table 5.2-19 and Table 5.6-3: The amount of fuel and natural gas listed in these tables are not included in the general process discussions of air emissions and permitting. The EIS should discuss this issue.

Response D0027-020

Although the conversion facility contractor is proposing to use electrical heating for the facilities, emissions from natural gas use were analyzed as a bounding case because the emissions would be higher than those from furnaces or electric heat. The boiler emission numbers given in Table 5.2-17 of the Portsmouth EIS and Table 5.2-14 of the Paducah EIS were derived on the basis of the natural gas usage numbers given in Table 5.2-22 of the Portsmouth EIS and in Table 5.2-19 of the Paducah EIS; footnotes have been added to the emissions tables to clarify that the boiler emissions are based on natural gas use.

Liquid fuel will be used at the facilities by the vehicles used for cylinder transport from the cylinder yards to the conversion facilities. Potential emissions resulting from liquid fuel use are small compared with point sources, and the resulting ambient levels are low due to dispersion along the length of the haul roads. The impacts from these emissions were assumed to be negligible and were not quantified in the EISs.

Comment D0027-021

Table 6-1: This Table indicates UDS will prepare an Annual Hazardous Chemical Inventory report each year. Chemical threshold quantities are derived from the aggregate of all residents on the DOE Reservation. Currently DOE provides USEC a monthly chemical inventory list of materials managed by various DOE sub-contractors on site. USEC then compiles the list to determine if a threshold quantity has been exceeded. The EIS method should address the current practices and how compliance will be demonstrated for the site.

Response D0027-021

See Response D0027-009.

Comment D0027-022

Table 6-1: This Table indicates the DUF₆ conversion plant will not discharge process wastewater and therefore will not need a NPDES permit. USEC experience has been that a wet scrubber, water-cooled heat exchangers and water spray cooling will have a process waste stream. The EIS should address how these waste streams are to be treated or indicate a discharge permit will be required.

Response D0027-022

The quoted item in Table 6.1 has been modified to read as follows: “UDS is studying options for management of process water/blowdown discharges. The need for a KPDES permit for such discharges will be determined based on the outcome of the study. If it is determined that a KPDES permit is required, UDS will apply for the permit at the appropriate time.”

COMMENTOR D0028: **Norman A. Mulvenon, Chair**
Oak Ridge Reservation Local Oversight Committee

Comment D0028-001

The Citizens’ Advisory Panel (CAP) of the Oak Ridge Reservation Local Oversight Committee, Inc. (LOC) concurs with the preferred alternatives presented for the two DEISs.

Response D0028-001

Comment noted.

Comment D0028-002

CAP’s special concern is the removal of the DUF₆ cylinders from East Tennessee Technology Park (ETTP). We are pleased that this action is to be completed by 2008 prior to the deadline imposed by the Tennessee Department of Conservation and Environment Commissioner’s order and so that the accelerated cleanup of ETTP can be accomplished in a timely manner.

Response D0028-002

DOE is committed to complying with the 1999 consent order with the Tennessee Department of Environment and Conservation that requires the removal of the DUF₆ cylinders from the ETTP site or the conversion of the material by December 31, 2009. Toward that end, the DOE contract for accelerated cleanup of the ETTP site, including removal of the DUF₆ cylinders, calls for completion of this activity by the end of FY 2008. The CAP’s preference for accelerating the removal of the cylinders from the ETTP site is noted.

Comment D0028-003

The cumulative impact portion of the Portsmouth EIS should be updated to reflect the decision to site the centrifuge plant at Site B.

Response D0028-003

The cumulative impacts analysis included in both the draft and final Portsmouth conversion facility EIS assumed that a new USEC centrifuge enrichment facility would

be constructed and operated at the Portsmouth site (see Sections S.5.16 and 5.3.2). As stated in Section S.5.16, the analysis assumed that such a plant would be sited at Portsmouth, that the existing DOE gas centrifuge technology would be used, and that the environmental impacts of such a facility would be similar to those outlined in a 1977 EIS for Expansion of the Portsmouth Gaseous Diffusion Plant that considered a similar action (ERDA 1977).

The 1977 EIS was used because it evaluated construction and operation of an 8.8 million separative work unit gas centrifuge enrichment facility at Location B of the Portsmouth site, compared to the currently proposed 3.5 million separative work unit USEC facility. It should be noted that NRC licensing activities for the proposed centrifuge enrichment plant will include preparation of an environmental impact statement that must also evaluate cumulative impacts at the Portsmouth site. The centrifuge enrichment facility cumulative impacts analysis will be based on the anticipated USEC enrichment facility design, which does not currently exist, and benefit from the detailed evaluation of conversion facility impacts presented in this EIS.

The text of Sections S.5.16 and 5.3.2 has been revised to indicate that USEC announced in January 2004 that it had selected Portsmouth as the site for its centrifuge enrichment facility.

COMMENTOR D0029: **Vina Colley, President**
Portsmouth/Piketon Residents for Environmental Safety and
Security

Comment D0029-001

Thank you for the opportunity to testify about the DU conversion plant. Facility Accidents Involving Radiation or Chemical Release on page 2-29 (2.4.2.2.2) DOE/EIS-0360 Construction and Operation of a Depleted Uranium Hexafluoride Conversion Facility dated December 2003. Under the alternative, it is possible that human-error could cause an accidental release of more deadly radiation and toxic chemicals into the environment affecting both the workers and the general public.

Response D0029-001

As discussed in Section 4.3.4 of both the Portsmouth and Paducah EIS, a range of accidents belonging to four frequency categories were considered. In each frequency category, the accidents with the maximum consequences were selected for presentation in the EISs. The frequency category designated as incredible encompassed a range from once in a million years at the high end to about once in 10 million years at the low end. All reasonable accident initiators, including human error, were considered in the development of accident scenarios.

Comment D0029-002

For the Piketon, Oak Ridge and any other plant to ship these cylinders off-site and continue moving these cylinders around, whether by train or by truck, not only provides the terrorists with a moving target as well as increases the threat of nuclear terrorism. We shouldn't ship these potential "dirty bombs" of poisonous hazardous waste cylinders because there will be unnecessary risks of exposure to the workers and the public.

Response D0029-002

The commentor's preference for not shipping the DUF₆ cylinders off site is noted. However, with two conversion facilities planned and three sites with DUF₆ inventories, cylinders at one of the sites have to be shipped off site. The proposed action is to ship the cylinders at ETTP to Portsmouth. The impacts associated with the transportation of cylinders are addressed in Section 5.2.5 of the Portsmouth EIS.

The security of cylinder shipments while en route is a recognized and important consideration and will be taken into account in the transportation planning process. All cylinder shipments, regardless of the transport mode, will comply with DOT regulations for the shipment of radioactive materials, as specified in Title 49 of the *Code of Federal Regulations*. These regulations are designed to be protective of public health and safety during both accident and routine transportation conditions.

Comment D0029-003

Many of these cylinders contain plutonium (PU) and Neptunium NEP in them and many other Transuranic elements. Past history has also revealed shoddy record keeping at the Piketon plant. We find the records on these cylinders often disappear or the government simply fails to follow necessary safety precautions, which can cause even more serious problems once these depleted uranium (DU) cylinders become heated up.

Furthermore, where will we put all the toxic waste? How many more people will ultimately be contaminated with PU and NEP and many other daughter products? Who will want to store such nuclear waste? And how much more waste from these potential "dirty bombs" will be left over, which further increases the threat of nuclear terrorism? The scope of this work is to push forward into unknown territory.

Response D0029-003

Impacts associated with potential transuranic contamination (including Pu and Np) of DUF₆ cylinders at the three storage sites are discussed in detail in Appendix B of both the Portsmouth and Paducah EISs. The impacts are also summarized in Sections 5.1.2.1, 5.2.3.1, and 5.2.3.2 of the Portsmouth EIS and Sections 5.1.2.1, 5.2.2.1, and 5.2.2.2 of the Paducah EIS. As indicated in those sections, the impacts associated with transuranic contamination of cylinders are relatively small compared with the impacts associated with the DUF₆ stored in the same cylinders.

The sites maintain a database called the Cylinder Inventory Database which contains all pertinent records and information about the history and current condition of the cylinders. Workers follow approved and documented procedures when they inspect, move, or otherwise handle the cylinders. The conversion contractor will develop and implement safe handling procedures when emptying the cylinders into the conversion plant. Management of wastes to be generated during the conversion operations is discussed in Section 5.2.3.7 of the Portsmouth EIS and in Section 5.2.2.7 of the Paducah EIS. The conversion contractor plans to dispose of the depleted U₃O₈ product or other products for which no use is found at an approved disposal facility in Utah or Nevada. There are no plans to leave any hazardous or radioactive wastes from the conversion process at the sites. The process proposed by the conversion contractor for converting the DUF₆ to U₃O₈ utilizes a known, proven technology. DOE plans to decide the specific disposal location(s) for the depleted U₃O₈ conversion product after additional appropriate NEPA review. Accordingly, DOE will continue to evaluate its disposal options and will consider any further information or comments relevant to that decision. DOE will give a minimum 45-day notice before making the specific disposal decision and will provide any supplemental NEPA analysis for public review and comment.

Comment D0029-004

Performance at the Piketon plant over the past 50 years has been based solely on government secrecy and lies. Recent statements being made by government contractors vying to build two new plants at Piketon is also based on similar lies that we've all heard before.

Telling local schools teachers, media and all local business owners that these new jobs will be safe and better than before is simply another LIE! The truth is we the people of the United States are engaged in a war on terrorism. The government has even lied to us about why we were going to war against Iraq (there were no weapons of mass destruction in Iraq). We are Americans and we have the right to know the truth about health hazards and other potential threats that the promise of these new jobs will bring with them into Piketon, into each of our communities, even into our very own backyards!

Response D0029-004

The NEPA process used to review federal projects, including the construction and operation of these conversion facilities, is intended to incorporate public input and to answer the questions and concerns of the public to the greatest extent possible in an open and honest manner. The EISs have addressed potential health impacts from the proposed facilities in a very thorough and truthful manner. In the Paducah EIS, potential health and safety impacts during operations are discussed in Sections 5.2.2.1 and 5.2.2.2 for routine conditions and accidents, respectively. In the Portsmouth EIS, potential health and safety impacts during operations are discussed in Sections 5.2.3.1 and 5.2.3.2 for routine conditions and accidents, respectively. The results of the analyses indicate that the risks to human health and safety are expected to be low and well within applicable limits and regulations. Additionally, the preferences and opinion of the community are also taken into account through the public participation process. The public scoping process for the

EISs is described in Section 1.6.1 of each EIS, and all comments received from the public during the public comment period on the draft EISs have been considered in the preparation of the final EISs.

Comment D0029-005

Many of you know what serious harm will come from the DU conversion plant or from the Centrifuge, but some of you don't. If the Piketon community will still be operating a nuclear waste storage facility then everyone in the Piketon community should be told the truth that the Portsmouth Gaseous Diffusion will be a conversion waste storage plant. In the end you can expect to find little work, but more toxic, hazardous chemicals coming through our area and contaminating our community. We might suggest that as a sign of good faith that the government buys up the homes leading into the plant if they still intend to build these two hazards plants.

Response D0029-005

There are no plans for the long-term storage of conversion products at the Portsmouth or Paducah conversion facilities. As discussed in each site-specific EIS, all wastes generated under the proposed action would be stored, treated, and disposed of in accordance with all applicable regulations, as appropriate. The depleted uranium conversion product, emptied cylinders, and radioactively contaminated waste will be disposed of in off-site LLW disposal facilities, such as Envirocare of Utah and the NTS. See also response to Comment D0029-003.

DOE is committed to accomplishing the conversion and disposition of its depleted uranium hexafluoride inventory in a manner protective of the workforce, the public, and the environment.

The commentor's suggestion that DOE buy homes near the plant is outside the scope of this EIS.

Comment D0029-006

It is high time for the DOD/DOE to abandon their Nazi mentality and remember their crimes against humanity. Thousands of American workers that you lied too became made sick as if Piketon was a Nazi concentration camp and we were your holocaust victims. The ghosts of thousands of former plant workers and eventually the ghosts of those who are now dying after deadly exposures from the Portsmouth Gaseous Diffusion plant will certainly come back to haunt you in the end. Not only here, but at other DOE/DOD site across this country! If you don't believe in God and the Day of Judgment, the Devil and hell, you and your families will have an eternity to think about your crimes against humanity.

Cancer and heart problems around the Portsmouth Gaseous Diffusion plant are extremely high. Thousands of community residents have not been given any compensation for their cancers or other radiation-induced illnesses, either. Like the Nazis, you shall stand before God Almighty with their blood on your hands too.

Response D0029-006

DOE has established the Office of Worker Advocacy to oversee workers' claims. Workers may submit an application for any illness that may have been caused by exposure to toxic substances, radiation, or biological agents while they were working at a covered DOE facility. Information about the program is available on the Web at <http://www.eh.doe.gov/advocacy/index.html>. Application forms may be downloaded from this Web site or they can be requested by calling or visiting one of the DOE Resource Centers. Listing of the Resource Centers is also available from the above Web site. The telephone numbers of the resource center at Portsmouth are 740-353-6993, and Toll Free: 866-363-6993, at Paducah 270-534-0599, Toll Free: 866-534-0599, and at Oak Ridge 865-481-0411, Toll Free: 866-481-0411.

In November 1996, the ATSDR, a federal government agency that is separate from and independent of DOE, issued a Public Health Assessment of the Portsmouth Gaseous Diffusion Plant site (ATSDR 1996; available at http://www.atsdr.cdc.gov/HAC/PHA/portsmouthgas/pgd_toc.html#lot). The study was conducted in response to a petition by the Pike County and Scioto County residents in 1992. The study concluded that there did not appear to be any off-site threat to public health from any site activity or release. ATSDR found off-site contamination was not at levels that could cause adverse health effects. Radiation measurements off site did not exceed normal variations in background for the region.

The ATSDR study also indicated that residents had raised questions about excessive cancer rates in Scioto County, excessive birth defects, and other adverse health effects believed to be related to environmental releases from the site. ATSDR concluded that available information about health outcomes did not suggest any adverse health impact from site operations.

Since the publication of the ATSDR study in 1996, the gaseous diffusion plant at Portsmouth has been shut down and certain operations have been discontinued. During the same period, no major releases have taken place from the site that would cause an increase in off-site public health impacts.

Portsmouth is not a Department of Defense (DOD) site, and activities at DOD facilities are outside the scope of these conversion facility EISs.

Comment D0029-007

Additional threats that the Piketon plant poses include several earthquake tremors (at least 5-7 on the scale) that we have had. We live in a flood plain zone. Tornadoes have also been known to touch down within a couple miles from the Portsmouth Gaseous Diffusion plant, too. Any of these so-called "acts of God" can certainly cause the Piketon nuclear facility to explode like Chernobyl.

Response D0029-007

The accident assessments included in Sections 5.1.2.1 and 5.2.3.2 of the Portsmouth EIS include consideration of a range of natural phenomena as accident initiators, including earthquakes, floods, and tornadoes. The specific accidents discussed in detail in the EIS are those expected to have the greatest potential consequences. Given the nuclear properties of depleted uranium, a conversion facility accident similar to that at Chernobyl is physically not possible.

Comment D0029-008

Two aquifers beneath the Piketon nuclear plant supplies our groundwater. One is shallow and the other aquifer is deep. DOE reports the shallow aquifer is contaminated, with (TCE) trichloroethylene being the main contaminant of concern. The other aquifer is not of sufficient volume to be a source of drinking water. DOE maintains that no groundwater has migrated offsite, which we know to be a bare face lie. Arguments similar to these were used at the Pantex plant in Texas, where a shallow “perched” aquifer was supposedly confined, but has since been found to be leaking into the much larger Ogallala aquifer, despite DOE’s earlier false assurances to the American public that all is safe. (TCE) trichloroethylene is contaminating the Ogallala Aquifer, which was outlined in the Radioactive Waste Management Associate groundwater report February 2002 on groundwater movement of the Portsmouth Gaseous Diffusion Plant.

Response D0029-008

On-site contamination of groundwater at the Portsmouth site is discussed in Section 3.1.5.2 of the Portsmouth EIS. As described in that section, five on-site monitoring wells have shown contamination with volatile organic compounds, including TCE and radionuclides. Two remediation projects are under way to clean up TCE-contaminated groundwater at the site. Monitoring results from wells in the vicinity of the site indicate that groundwater contamination is limited to the shallow aquifer, within the DOE site property.

Contamination of groundwater related to the Pantex plant is outside the scope of this EIS.

Comment D0029-009

Below is a few reason that the Portsmouth Gaseous diffusion should be investigated before we bring more nuclear jobs to Piketon, Ohio. DOE/DOD haven’t even address the off site problems from the past 50 years of production yet.

Response D0029-009

DOE has actively addressed contamination from past operations at the Portsmouth facility. Investigation and cleanup of hazardous substances (as defined in CERCLA) and hazardous wastes (as defined in the RCRA) that have been released to air, surface water, groundwater, soils, and solid waste management units as a result of past operational

activities at the Portsmouth site are being conducted under the provisions of three administrative edicts issued pursuant to RCRA, CERCLA, and/or Ohio state law.

Portsmouth is not a DOD facility, and activities at DOD facilities are outside the scope of these conversion facility EISs.

Comment D0029-010

The report of Groundwater Movement at the Portsmouth Gaseous Diffusion Plant by Marilyn dela Merced, Beat Hintermann and Marvin Resnikoff for the Uranium Enrichment Project and PRESS February 2002 should be thoroughly investigated before anyone should begin pushing the idea of creating more dirty jobs for the area. We will need to have independent scientists looking at the problems here first in order to hold someone within the U.S. government, within the Piketon nuclear plant accountable before beginning construction of the Depleted Uranium Hexafluoride Conversion Facility at Piketon, Ohio.

We will also need to look much closer at the on site and off site contamination problems from the past 50 years of productions at the Piketon plant, too

Response D0029-010

On-site contamination of groundwater at the Portsmouth site is discussed in Section 3.1.5.2 of the Portsmouth EIS. As described in that section, five on-site monitoring wells have shown contamination with volatile organic compounds, including TCE, and radionuclides. Two remediation projects are underway to clean up TCE-contaminated groundwater at the site. Monitoring results from wells in the vicinity of the site indicate that groundwater contamination is limited to within the DOE site property.

See also the responses to Comment No. D0029-006 and D0029-009.

Comment D0029-011

POTENTIAL COMMUNITY HEALTH THREAT POSED BY RADIATION IN CREEK FLOWING FROM PORTSMOUTH GASEOUS DIFFUSION PLANT IN PIKETON, OH. Dr. Paschenko has collected over 100 samples of water and soil around the plant, which will be analyzed in SSGR's laboratory in the coming months. However, in the first stage of analysis, Paschenko discovered levels of beta activity in samples of foam that were at least 100 times higher than normal background radiation levels. This foam was collected in a creek that flows from the plant grounds along borders of the community residents. We need more time to bring others into Piketon for additional independent studies in order to hold DOE and other government officials accountable.

Response D0029-011

The DOE has conducted soil and water sampling at on-site and off-site locations. Results of these sampling efforts are summarized in Sections 3.1.4 and 3.1.5 of the Portsmouth EIS. When soil contamination has been identified, it has been addressed and has been or will be remediated under site remediation programs. DOE is not aware of any elevated levels of contamination at any off-site locations associated with these facilities (i.e., levels that could cause elevated risks of adverse health impacts).

Comment D0029-012

Members of (PRESS) Portsmouth/ Piketon Residents for Environmental Safety and Security have asked the Ohio Environmental Protection Agency (OEPA) and the company managing the Portsmouth Gaseous Diffusion plant many times to please post warning signs along the creeks that surround the Portsmouth Gaseous Diffusion plant located in Piketon, Ohio. Still to this day THERE ARE NO SIGNS! This alone is hard core evidence that clearly proves the OEPA's blatant disregard for the value of human life and raises some serious concerns about their role as protectors of environmental safety.

Response D0029-012

Activities of the OEPA are outside the control of DOE and outside the scope of this EIS. DOE is not aware of any significantly elevated levels of contamination at any off-site locations that would warrant posting signs.

Comment D0029-013

(PRESS) Portsmouth/Piketon Residents for Environmental Safety and Security have only used documents from the Portsmouth Gaseous Diffusion plants to publicly present every story about the problems at the Piketon, Ohio plant. Stories about the "Plutonium" which the company managing the Portsmouth Gaseous Diffusion plant consistently denies having on site, for example. Workers nationally at the DOE/DOD plants now have a compensation bill called EEOICPA. This bill is paying some cancer victims but not all cancer victims nor all illness. PRESS is asking for an audit and investigation of the Portsmouth Gaseous Diffusion Plant as well. If the recent findings of Sergie Paschenko, a well known Russian physicist, are validated community concern will quickly escalate.

Once again, this will provide additional hard-core evidence of the OEPA's blatant disregard for the value of human life. Residents of the local community have not been informed that they have problems.

Response D0029-013

In 2000, the DOE Office of Oversight, within the Office of Environment, Safety and Health conducted an investigation into the activities that took place at the Portsmouth site prior to 2000, and documented their findings in a report entitled *Independent*

Investigation of the Portsmouth Gaseous Diffusion Plant, Volume 1: Past Environment, Safety, and Health, Practices (DOE 2000). Questions related to handling of materials with transuranic elements in them at the Portsmouth site are addressed in the study. The question of potential transuranic contamination of DUF₆ cylinders was addressed in two separate studies (Hightower et al. 2000; Brumburgh et al. 2000). It is also discussed in detail in Appendix B of both EISs. Also see Response to Comment No. D0029-003.

The EISs used data that were published or publicly available. Any samples that Mr. Pashenko may have taken and analyzed as mentioned by the commentor would not have been considered in the EISs unless they were publicly available.

Comment D0029-014

Furthermore, the site alert/alarms have not been sounded at the time of negative release of gases. On March 7, 1978 a 14 ton cylinder filled with liquid uranium hexafluoride was being hauled to a cooling site by straddle and lift cylinders. The cylinder lost over 21,00.00 lbs of uranium hexafluoride passing through a hole in the cylinder. The alarm should have sounded, but didn't! Again in August of 1980 the Cleveland Plain Dealer reported that: 2,500 pounds of uranium was lost down the west drainage ditch, which also collected "essentially all the uranium that precipitated from the plume". About 1,500 pounds of uranium escaped from the ditch into the nearby Scioto River.

The Cleveland Plain Dealer reported that at least 43 workers were known to have become contaminated. Goodyear officials speculated that most of the URANIUM HEX-A-FLUORIDE reacted with moisture in the air (FORMING HYDROGEN FLUORIDE - A POTENT ACID CAPABLE OF EATING THROUGH GLASS AND URANYL FLUORIDE) another uranium compound. In 1992 while moving and painting the Deplete Uranium cylinders a valve was broken. This caused more material to become airborne. Again there were NO ALARMS for community awareness.

Response D0029-014

The large release of DUF₆ in 1978 identified in the comment is discussed in the response to Comment No. D0003-010. The result of the accident was the release of 21,125 pounds (9,600 kg) of feed material in less than 5 minutes. Emergency notifications and responses were rapid; there were no injuries to personnel or the off-site public. A Public Health Assessment for the Portsmouth Gaseous Diffusion Plant site was conducted by the ATSDR, a federal government agency that is separate from and independent of DOE, in November 1996. As part of the Public Health Assessment, ATSDR evaluated the records associated with this accident and concluded that "There was no measurable off-site release from the UF₆ cylinder rupture that took place on March 7, 1978. ATSDR received the incident report for the accident and all sample documentation. ATSDR staff have determined that not enough material could have reached off-site areas to cause adverse health effects." (See ATSDR 1996, Section on Environmental Contamination and Other Hazards, and Subsection on Off-site Contamination). To prevent such an accident from

reoccurring, several steps were taken, including modifications of cylinder handling equipment and eliminating the transport of uranium hexafluoride in the liquid state.

The DUF₆ currently stored in the cylinders in yards is in solid state. When the cylinders are emptied into the conversion plant, the DUF₆ in them will be transformed into gas by sublimation without going through the liquid state in an autoclave (a completely enclosed structure). Therefore, the chance of occurrence of the type of accident that took place on March 7, 1978, at the conversion facility is essentially nonexistent.

The Portsmouth Site has an Emergency Plan in effect and conducts periodic emergency drills and exercises to prepare for any emergency situation. There are two levels of emergencies at the Site: (1) Alert — An alert is declared if emergency hazards could affect plant personnel, but not the general public outside the plant boundaries. Local government officials are advised so that their resources and emergency responders are ready to assist on site if needed. (2) Site Area Emergency — A Site Area Emergency is declared if the hazards could affect the general public within a 2-mile radius of the plant boundaries. This is the most serious emergency situation and means that a significant release of hazardous materials may occur. All individuals within this notification area would be notified immediately by audible voice alert from the plant. Additionally, messages can be directed immediately to local radio and television stations which provide protective actions that are recommended. These recommendations could be to evacuate or to shelter in place. Local government officials are also notified immediately so that their resources, which may include deputies and offices as well as volunteer fire personnel, may quickly focus on protecting the general public. Experts from the Site, federal agencies, and state and local officials coordinate emergency actions. Warning sirens are in place to source for public alert should a Site Area Emergency be declared. There have been no such emergencies requiring warning sirens since the warning system was placed in operation in 1988. Periodically, the sirens are sounded for routine testing or during drills.

DOE conducts a comprehensive monitoring program at both on-site and off-site locations that measure the ambient concentrations of radionuclides and hazardous substances in environmental media, including air, water, soil, building surfaces, vegetation, and wildlife. Any occurrences of higher than acceptable concentrations are reported, and necessary actions are taken. All the findings from the monitoring program are documented in the annual site environmental reports. The most recent site environmental reports that were available at the time were used in the preparation of the Portsmouth and Paducah EISs. The environmental conditions at and around the Portsmouth, Paducah, and ETTP sites are summarized in Section 3 of the EISs.

Comment D0029-015

The Portsmouth Gaseous Diffusion in Piketon, Ohio scored 54.6 for the NPL superfund. A minimum score of 28.5 score suggests it should have been placed on the Superfund. Portsmouth has never been placed on the NPL listing.

Response D0029-015

Investigation and cleanup of hazardous substances and hazardous wastes that have been released to air, surface water, groundwater, soils, and SWMUs as a result of past operational activities at the Portsmouth site are being conducted under the provisions of the various edicts that have been issued pursuant to RCRA, CERCLA, and/or Ohio state law. See Chapter 6 of the EIS for a complete discussion of laws and regulations applicable for a conversion facility at Portsmouth. Discussion of releases and potential health impacts associated with past operations at the Portsmouth site would be provided in documentation for site investigations and remediation actions, which are obtainable through the site public affairs office, at (740) 897-2457.

The question of whether the Portsmouth site should be on the National Priorities List is beyond the scope of the EIS.

Comment D0029-016

Below are a few reports of the many off-site problems:

Columbus Dispatch Feb 7, 1993, Michael B. Lafferty reported that the fish in streams surrounding the Portsmouth Gaseous Diffusion Plant in Piketon, Ohio have elevated levels of radiation according to an Ohio Environmental Protection Agency (OEPA). The report was written in April of 1992 but was not released until the Dispatch asked for a copy for his story in 1993. The report stated the most comprehensive state evaluation of radiation and chemical pollution surround the nuclear fuels plant. Further example suggests the Plant's uranium hexafluoride is concentrated into a more radioactive form for use as fuel in reactors like those on submarines. Bomb grade uranium was process from 1954 until at least 1991 or 92.

The dispatch further reported that tissue from fish around the plant have elevated levels of radiation. Stream sediments also displayed radiation levels FIVE TIMES above the acceptable levels. There were also increased levels of arsenic, cadmium, chromium and mercury.

At one measured site on Little Beaver Creek in Southern Ohio. The total uranium levels were twice the level at which normally corrective action are required.

In total, the test samples were collected at 18 sites in the Scioto River , Big Beaver and Little Beaver Creeks, Big Run and at the water course referred to in the report as Nursing home road.

The EPA representative said in the 90's that there was a strong indication that radioactive and chemical pollutants would cause future problems. Biologists have been concerned about the uranium and heavy metals found in Little Beaver Creek. Most of the year, particularly during summer, wastewater from the plant supplies almost all flow into the streams. The EPA report also said they found radioactivity may be the results of the radioactive isotope potassium 40, which is considered an abnormally RADIOACTIVE substance that accumulates in bones like Strontium-90. Radiation could be the result of widespread technetium 99 contamination at the

Portsmouth Plant, too. Bernie Counts speculated the heavy metals may be suppressing some insect populations as well.

Finally, the EPA report says heavy metals in the sediments were also at high concentration levels. The highly elevated concentrations of chromium, (about 72 parts per million) and also mercury (0.24 parts per million) were found where Big Beaver Creek empties into the Scioto River and then into the OHIO RIVER, which is a primary source of drinking water for millions of unwitting Americans residing in cities further downstream, from Cincinnati all the way to New Orleans!

Response D0029-016

The environmental conditions at and around the Portsmouth site that may be affected by the proposed action and environmental data that are used in the analysis of the impacts associated with the alternatives considered in the EIS are described in Section 3.1 of the Portsmouth EIS. The data were obtained from the site annual environmental reports and other public documents. Site environmental reports are prepared based on data obtained from a comprehensive monitoring of the environment at and around the site and a detailed evaluation of the impacts associated with actual or projected releases to the environment from the site. Any reports issued by other federal agencies, including the EPA, and private organizations are reviewed and factored into the site environmental reports. The latest site environmental report available at the time was used in the preparation of the EIS. The data that go into the site environmental reports have to meet a high level of quality control and are obtained following strict procedures. Therefore, DOE has made every reasonable effort to obtain the most comprehensive and defensible data in preparing the EIS. Although not specifically addressed individually, all the data that the commentor has mentioned would either have been obtained by the site staff or reviewed and incorporated into the site reports and consequently the EIS.

COMMENTOR D0030: Charles and Vicki Jurka

Comment D0030-001

Pages 2-19 & 20: A proposed enrichment facility in New Mexico is attempting to broker a deal giving DOE responsibility for conversion of their DUF₆; for services similar to those DOE provides USEC. This DEIS (Paducah) bases its assumptions on a 25 year operational period with a maximum 20,000 tons/yr (DUF₆) throughput. Should USEC and the New Mexico company divide future conversion needs between Paducah and Portsmouth, many of the already marginal assumptions, regarding human health and the environment, would become invalid either in terms of time, throughput, or both. Rumors persist that plans are already underway to increase the capacity of the Paducah conversion plant beyond the four parallel conversion lines.

Response D0030-001

At the present time, there are no plans or proposals for DOE to accept DUF₆ cylinders for conversion beyond the current inventory for which it has responsibility. However,

Section 2.2.7 of the Portsmouth site-specific conversion facility EIS and Section 2.2.5 of the Paducah EIS discuss a number of possible future sources of additional DUF₆ that could require conversion, including a new commercially operated enrichment facility in New Mexico. The potential environmental impacts associated with expanding plant operations (including extending operations and increasing throughput) to accommodate processing of additional cylinders are discussed in Section 5.2.8 of the Portsmouth EIS and Section 5.2.6 of the Paducah EIS.

Because of the uncertainty associated with possible future sources of DUF₆ for which DOE could assume responsibility, there is no current proposal to increase the throughput of the conversion facilities or extend operations. However, for purposes of the EIS, it was assumed that the Portsmouth conversion process building would be designed and built with sufficient space to accommodate an increased plant throughput sometime in the future. The modular design of the dry conversion process — the Portsmouth and Paducah facilities are being designed with three and four parallel conversion lines, respectively — facilitates process expansion. In addition to the potential impacts associated with expanded plant operations, Section 5.2.8 of the Portsmouth EIS also discusses potential impacts that would be associated with a conversion facility consisting of four process lines rather than three. If a decision is made in the future to increase the number of parallel process lines beyond four at either site, additional NEPA review would be conducted.

Comment D0030-002

Page 4-11 (last para.): Many hypersensitive individuals were “created” due to an initiating dose that changed their normal immune response.

Response D0030-002

DOE is committed to conducting the conversion facility project in a manner that will keep workers, the public, and the environment safe. All exposures to process chemicals and radioactivity will be kept as low as reasonably achievable, and within health-protective standards and guidelines. The chemicals associated with the facility, mainly uranium hexafluoride, uranium oxide, hydrogen fluoride, and ammonia, have not generally been associated with hypersensitive reactions (see ATSDR’s toxicological profiles for Uranium; Fluoride, Hydrogen Fluoride, and Fluorine; and Ammonia; under “Immunological Effects.” The toxicological profiles are available at <http://www.atsdr.cdc.gov/toxpro2.html>).

Comment D0030-003

Page 4-11 (last para.): A pregnant woman exposed during an “accidental” release may show no adverse response herself; instead passing the toxic effect to the fetus.

Response D0030-003

Information on the reproductive effects of the chemicals associated with the facility, mainly uranium hexafluoride, uranium oxide, hydrogen fluoride, and ammonia, can be found at the Agency for Toxic Substances and Disease Registries Web site (see ATSDR's toxicological profiles for Uranium; Fluoride, Hydrogen Fluoride, and Fluorine; and Ammonia; under "Reproductive Effects" and "Developmental Effects." The toxicological profiles are available at <http://www.atsdr.cdc.gov/toxpro2.html>). The toxicological profiles summarize various studies in which the chemicals of concern caused adverse reproductive effects, generally at high doses. Under normal operations at the conversion facilities, exposures would be lower than levels that have been observed to cause adverse reproductive and developmental effects. As discussed in Section 5.1.2.1 for the no action alternative and Section 5.2.2.2 for the proposed action alternatives in the Paducah EIS; and in Section 5.1.2.1 for the no action alternative and Section 5.2.3.2 for the proposed action alternatives in the Portsmouth EIS, if some of the postulated accidents were to occur, it is possible that some exposed workers or members of the general public may be injured or die. If there were pregnant women among the exposed population, the developing fetus' could also be exposed and injured. However, as explained in the above cited sections of the two EISs, the probability of occurrence for these high consequence accidents is very low. As a result, the risk of any fatalities, including death or severe injury to a fetus, would be much less than one, indicating that no fatalities or severe injury would be expected.

Even though the risks are low, the consequences for a few of the accidents analyzed in the EISs, mainly those associated with the storage of anhydrous NH₃ and aqueous HF on site, are considered to be high. As stated in Section 5.2.2.2 of the Paducah EIS, and in Section 5.2.3.2 of the Portsmouth EIS, the consequences can be reduced or mitigated through design (e.g., by limiting tank capacity), operational procedures (e.g., by controlling accessibility to the tanks), and emergency response actions (e.g., by sheltering, evacuation, and interdiction of contaminated food materials following an accident).

Comment D0030-004

Page F9 (F.1.2): When addressing the chemical impacts of hydrogen fluoride, on human health, one important aspect, not considered in this DEIS (Paducah), is the propensity of inhaled HF to damage the heart and arteries once absorbed into the blood stream. For instance, the latent effects, for the general public, from the action of HF (fluoride) on the heart and vascular system could be considerable when calculating a dose of 0.02mg/kg-d (168 hours per week) over a 25 year period. Low doses of fluoride entering the body, over a long period of time, might also produce arthritic conditions from the calcifying action on joints.

Also unclear is whether total regionally-emitted "fluoride" was considered when determining potential dose to the general public. One might expect that the coal burning plants, identified in Table 3.1-2 (page 3-7), would be additional regional-sources of fluoride emissions as well as PGDP and the Honeywell plant in Metropolis, Illinois. Further, in this instance, an important

consideration should be the extent and duration of past fluoride exposure, for general public, living within 10 miles of PGDP. It is also unclear as to whether the HF dose-rate of 0.02 mg/kg-d applies to all of the general public residing within the targeted 50 mile radius or to public in an unidentified radius. One would expect the impact to be greater the closer one lives to the plant. Low doses of fluoride entering the body over a long period of time might also produce generational effects.

Response D0030-004

In the EISs, the hydrogen fluoride (HF) reference levels for worker and general public exposures were 0.71 and 0.02 mg/kg-d, respectively (see Section F.1.2.2 for background). These exposure levels were based on the OSHA standard; the general public level was modified to account for possible continuous exposures and to be protective of sensitive subpopulations in the human population. The reference level used for the general public is more conservative than the minimal risk level of 0.06 mg/kg-d developed by the Agency for Toxic Substances and Disease Registry (ATSDR); (see the Toxicological Profile for Fluorine, Hydrogen Fluoride, and Fluoride available at <http://www.atsdr.cdc.gov/toxpro2.html> for more information on the minimal risk levels and information on toxicity of fluoride compounds on different human biological systems, including the vascular system and genetic effects).

Adverse effects on the thyroid and skeletal system from drinking water fluoride exposures have been observed at 0.5 to 0.8 mg/kg-d in rats and mice (see ATSDR Toxicological Profile for Fluorine, Hydrogen Fluoride, and Fluoride). These were the effects occurring at the lowest doses, meaning that any vascular system effects (i.e., damage to the heart or arteries) or generational (genetic) effects would occur at higher doses. The estimated maximum doses estimated from conversion plant normal operations were much lower than these doses. A maximum daily intake of less than 0.000002 mg/kg/d (10,000 times less than the reference level) was estimated for the general public around both conversion facility sites; this dose included both inhalation and ingestion pathways. The hazard indices given in Sections 5.2.2.1.2 of the Paducah EIS and 5.2.3.1.2 of the Portsmouth EIS include consideration of these hydrogen fluoride and fluoride exposures as well as potential uranium exposures; all hazard indices were several orders of magnitude below 1, the level of concern. The doses were estimated for hypothetical MEIs; the actual doses for the general population within a 50-mile radius of the facilities would be much lower than these doses.

DOE has not been able to find any evidence that the current emissions of HF from the Paducah gaseous diffusion plant and other facilities in the vicinity of Paducah gaseous diffusion plant are of any health concern. Given that the exposures from the proposed conversion facility were estimated to be so much lower than the adverse effect levels (see previous paragraph), there would not be any expected adverse cumulative impacts in the population around the site due to HF emissions.

Comment D0030-005

Page 5-63: “Total maximum estimated concentrations for PM_{2.5} would approach NAAQS and SAAQS...” What is the anticipated composition (metal, chemical, radiological) of that PM_{2.5} (microns), expected to be released to air during normal plant operations? The character of the respirably sized particle is important when considering its potential to adversely impact human health. For instance, respirably sized particles of U₃O₈ could represent a significant pathway for radiation exposure if inhaled into the lungs or absorbed into the gastrointestinal tract, through contaminated foodstuff. The health risk for PM_{2.5} does not alone lie in the airborne levels but also in the duration that particle remains in the body and the effect it has on cell structure and activity. Also, due to the size of the particle and the anticipated high-release levels this DEIS (Paducah) should have assessed a terrain dispersion model that included cumulative levels of particulates and their re-entrainment.

Response D0030-005

The PM_{2.5} concentrations that would approach or exceed the NAAQS and SAAQS would occur mainly during construction activities. The major portion of the PM_{2.5} in the air would be contributed from background levels already present and a regional problem along the Ohio River Valley; the conversion facilities would contribute about one-third of the total concentration level over the limited duration of construction activities. During construction, these particulates would have a composition similar to that of the uncontaminated soil at the construction sites. The particulates might also be the combustion products produced from the fuel used for the construction vehicles. At this time, the standard method used to evaluate the toxicity of such particulates that are less than 2.5 microns in diameter is comparison of ambient levels with the 24-hr and annual NAAQS of 65 and 15 µg/m³, respectively. This standard is based on extensive toxicity data that take into account the duration that the particles remain in the body and the internal cellular effect.

The model used to estimate the airborne concentration of PM_{2.5} was ISCST3, the EPA-recommended model. PM_{2.5} particles are so small and light that they act as a gaseous pollutant, do not readily deposit on surfaces, and are transported over long distances (EPA 1995). To estimate the maximum airborne PM_{2.5} concentrations, it was assumed that no deposition occurs, which makes consideration of re-entrainment unnecessary.

During operations, the PM_{2.5} levels are estimated to be much lower than during construction (see Section 5.2.3.3 of the Portsmouth EIS and Section 5.2.2.3 of the Paducah EIS). In addition, more than 99.9 % of the PM_{2.5} released to air during operations is from the boiler and the backup generator. The composition of that PM_{2.5} would not be any different from a standard industrial boiler or backup generator. The small amount of uranium released from the conversion building stack (< 0.25 g/yr) is assessed separately from the PM_{2.5} emissions. It is estimated that no adverse health impacts would be associated with the uranium emissions (see the hazard indices given in Section 5.2.2.1.2 of the Paducah EIS and Section 5.2.3.1.2 of the Portsmouth EIS).

Comment D0030-006

Page B-7 (B.5): "...potential impacts of any TRU and Tc contamination would be the greatest in cases involving accidents during handling of the cylinders and during the management of wastes associated with the cleaning and disposition of empty cylinders." (B-9) "...doses...attributed to TRU and Tc-99 found in the heels...can be relatively high compared to uranium doses." Page 2-36 (2.4.2.8) "Current USD plans are to leave the heels in the emptied cylinders...and either (1) crush the cylinders..." Page 2-4 (2.2.2.6). This section presents an option for compacting and sectioning emptied cylinders still containing heels.

The option to crush and section cylinders in the manner presented on page 2-36 provides no explanation as to whether protective measures were incorporated into that process that would protect workers from exposure to "free" TRU or grouted TRU. This DEIS (Paducah), in general, fails to consider worker health with respect to handling cylinders.

Page B-6 (B.4) "...UDS is now planning to fill the emptied cylinders with the depleted U₃O₈ product..." We agree this would be the preferred option and suggest the heels be stabilized with grout prior to refilling. We do disagree however that the U₃O₈ is "product": it is waste. Also, if the crush and cut option is still valid, this DEIS needs to present a clearer view as to how the TRU in the heels will be contained during processing.

Response D0030-006

With respect to cylinder yard worker risks, in the Paducah EIS potential health and safety impacts to cylinder yard workers during operations are discussed in Sections 5.2.2.1 (see Table 5.2-7) and 5.2.2.2 for routine conditions and accidents, respectively. In the Portsmouth EIS, potential health and safety impacts to cylinder yard workers during operations are discussed in Sections 5.2.3.1 and 5.2.3.2 for routine conditions and accidents, respectively. For routine conditions, the health and safety risks for cylinder yard workers are expected to be low and well within applicable limits and regulations. Under accident conditions, the cylinder yard workers might be the involved workers who could be injured if an accident took place in a cylinder yard. Each site has detailed documented emergency plans and trains its workers regarding procedures to follow in the event of an accidental release. These procedures, including evacuation and use of respirators and personal protective clothing, will lessen the chance of severe injury for involved workers in the event of an accident, although the risk cannot be eliminated altogether.

Section 2.2.2.6 of the EIS discusses the process to be used for either crushing the cylinders or reusing the emptied cylinders as disposal containers. If crushed, the process would be enclosed, and the debris from the operations would be collected by a vacuum system, thus greatly reducing the potential for worker exposures to the heels materials (including any TRU). Text similar to that in Section B.4 has been added to Section 2.2.2.6, stating that the current plan calls for stabilizing the heels in the emptied cylinders, and then after a storage period, using the emptied cylinders as U₃O₈ disposal containers.

In its ROD for the Programmatic EIS, DOE stated that it would use depleted uranium oxide generated by the conversion facilities to the extent possible, and store or dispose of the remainder (see Section S.1.1.3 of the EISs). Therefore, the U₃O₈ is considered to have a potential for use and is not necessarily a waste.

Comment D0030-007

Page E-7 (E 3.1): Does the figure of 70% include all the aqueous hydrogen F produced at both conversion plants?

Response D0030-007

The production totals in Section E.3.1 refer to production of aqueous HF from both facilities combined.

Comment D0030-008

The nominal wall thickness for DUF₆ cylinders is 312 mils. Ultrasonic measurements for the thickness of cylinders in storage at ETT and Paducah have shown that corrosive actions have reduced that thickness, in many instances, to less than half. DOE guidance recommends that a minimum cylinder wall thickness of 250 mils is “required” for safe handling and transporting cylinders. Studies have determined 3mils per year would be a normal rate of corrosive reduction in cylinders. At that rate, cylinders over 25 years old would already have wall thicknesses below the “safe level” of 250 mils, thus presenting a hazard when handling and shipping. Further, previous inspections of cylinders stored on the ground have found that areas in contact with the ground experienced greater corrosion rates. Other cylinders have not been inspected to assess wall thickness due to the storage configuration. It is our opinion that this DEIS (Paducah) has not adequately considered the conditions of the cylinders and the associated risk(s).

Response D0030-008

The Paducah and Portsmouth sites have extensive experience with moving the cylinders, and excellent safety records for those cylinder movements. Since the mid-1990s, most of the cylinders at the sites have been safely relocated to achieve safe, monitored storage conditions.

A 2003 Agreed Order between the Commonwealth of Kentucky and DOE stipulates that a detailed inspection procedure be followed prior to cylinder relocations within the Paducah site; the Portsmouth site follows similar procedures. Prior to movement or feeding into the conversion facility autoclaves, the cylinders would be visually inspected to ensure that no damage had occurred since the last scheduled inspection. (All cylinders undergo scheduled inspections at least once every 4 years; some are inspected annually). Ultrasonic wall thickness measurements would be conducted if the visual inspection indicated this was needed. No cylinder would be moved or fed into the process unless there was a high degree of confidence in its ability to withstand the handling.

With respect to transportation of ETTP cylinders to either the Portsmouth site or the Paducah site, all cylinder shipments would be in compliance with DOT safety regulations for the transportation of radioactive material, as specified in Title 49 of the *Code of Federal Regulations* requirements.

Both EISs consider the condition of the cylinders in the assessment of the no action alternative, which made estimates of the number of cylinder breaches that might occur in the future based on the number of breaches that have occurred to date, and on estimated corrosion rates for cylinders that previously were kept in poor storage conditions (e.g., in ground contact, or with debris left in skirted ends). Estimates of the impacts associated with possible additional cylinder breaches are given in Section 5.1.2 of each document, which discusses the no action alternative.

Comment D0030-009

Page F-21 (F.3.1): In the past river transportation was explored as an economical option for transporting cylinders from ETT. This DEIS did not analyze the risks associated with that mode of transportation.

Response D0030-009

The transportation of cylinders by barge was considered, but not analyzed in detail in the two conversion facility EISs. As discussed in Section 2.3.5 of each EIS, barge transport was not considered in detail (i.e., not considered to be a reasonable option) primarily because the nearest functioning barge facilities to Portsmouth and Paducah are located between 20 and 30 miles from the sites. Consequently, overland transportation would be required at each end of the route, as would additional cylinder loading and unloading steps. In addition, truck and rail were identified as the likely cylinder transport modes in conversion facility design documents.

As with any transportation mode, barge transport has associated advantages and disadvantages. For example, during barge transport there is no onboard fuel available and the shipment is not in close proximity to other transport vehicles, factors which could reduce, but not eliminate, potential accident risks. However, barge transport would require overland transportation by truck on each end of the route, as well as additional handling of cylinders during the loading and unloading of the barge. These activities have associated accident risks and would contribute to the radiation exposure of workers during normal cylinder handling. In addition, shipment by barge could require dredging of the river bottoms at the barge facilities, an activity with potential environmental impacts.

It should be noted that, regardless of the transport mode, all cylinder shipments must comply with the DOT regulations for the shipment of radioactive materials, as specified in Title 49 of the *Code of Federal Regulations*. These regulations are designed to be protective of public health and safety during both accident and routine transportation conditions.

For the reasons discussed above, a detailed evaluation of barge transport has not been included in the Final conversion facility EISs. If barge transportation was proposed in the future and determined to be a reasonable option, additional NEPA review would be conducted. Such a review would address all issues associated with the proposed activity.

Comment D0030-010

Will the calcium fluoride produced at the conversion plant be a granular form or a fine powder?

Response D0030-010

It is anticipated that the calcium fluoride produced at the conversion facility would be a mixture of particle sizes ranging from granules to fine powder, since no attempt to standardize the particle size is planned.

Comment D0030-011

The Depleted UF₆ Final PEIS expresses Hydrogen Fluoride in terms of anhydrous while this DEIS (Paducah) expresses it as aqueous. Please explain the reason for this change.

Response D0030-011

The Programmatic EIS for the Long-Term Management and Use of Depleted Uranium Hexafluoride (DOE 1999) evaluated a range of representative technologies in the areas of conversion, long-term storage, use, and disposal. At the time that the PEIS was prepared, no decision on long-term management had been made and no specific technologies had been proposed. For the conversion options considered in the PEIS, it was assumed that anhydrous HF would be produced and sold because (1) it was believed to be the chemical form most easily marketed, and (2) it represented an upper bound estimate of potential hazards due to its chemical nature.

Following the ROD for the PEIS, DOE released a Request for Proposals for specific conversion technologies and awarded a contract to UDS for construction and operation of conversion facilities at the Paducah and Portsmouth sites. This action is the subject of the two site-specific EISs. The proposed UDS conversion process produces aqueous HF as a product of DUF₆ conversion. Based on the experience of Framatome ANP, Inc. (a UDS partner), there is a commercially viable market for aqueous HF. Therefore, the production, handling, transportation, and sale of aqueous HF are considered in each conversion facility EIS.

Comment D0030-012

Perhaps we overlooked it, but we do not recall any information in this DEIS (Paducah) detailing annual use, storage, or transportation of anhydrous ammonia. It is apparent that anhydrous ammonia (page 2-12, 2.2.2.3) is an important component of the conversion process that will pose its own set of hazards.

Page 5-117 (Table 5.6-2): 10,000 tons of nitrogen gas (N₂) will be consumed annually during the conversion facility operations” (Paducah). Page 2-12 (2.2.2.3): “Nitrogen....a purging gas and is released to the atmosphere...the clean off-gas stream.”

Pages 5-59 through 61 (5.2.2.3.1): We are unsure as to whether all nitrogen referenced as an off-gas is a by-product of hydrogen generation from anhydrous ammonia. We are also unsure as to whether all 10,000 tons are expected to be released to air. Another uncertainty is whether this excess nitrogen, free for oxidation, was included in total NO_x emissions from conversion facility operations.

Response D0030-012

The use, storage, and transportation of anhydrous ammonia as part of the conversion process have been addressed throughout both the Paducah and Portsmouth EISs. In the Paducah EIS, the annual use of anhydrous ammonia is stated in Section 5.2.2.8 (Resource Requirements). Potential impacts from accidental release of anhydrous ammonia during storage are assessed in Section 5.2.2.2, and impacts from transportation accidents are assessed in Section 5.2.3.3. In the Portsmouth EIS, similar discussions are provided in Sections 5.2.3.8, 5.2.3.2, and 5.2.5.3, respectively for use, storage, and transportation.

The nitrogen in the process is used as a purge gas to control air in-leakage into the conversion processes. It would be released to the air without any substantial conversion to nitrogen oxides or other potential pollutants. It was not included in the total NO_x emissions from conversion facility operations because the absence of oxygen in contact with the nitrogen stream at high temperatures would severely limit the potential for NO_x formation.

Comment D0030-013

Page 5-65 (5.2.2.4. 1): water withdrawn from the Ohio River would approximate 57 million gallons per year. 4,000 gal/d would be released to surface water with the remainder of the withdrawn—water recirculated back into the process. Assuming this were true, there would be an enormous net water gain somewhere in the system or a lot of potentially contaminated water would be vented as steam from the cooling towers and other plant processes. This DEIS (Paducah) needs to better account for water usage/ disposal.

Response D0030-013

The text in Section 5.2.2.4.1 was revised for more current water use values (3 million gal/yr potable water and 37 million gal/yr for nonpotable uses, rather than 1.9 million and 55 million gal/yr). The text was further revised to indicate that 11.3 million gal/yr of wastewater would be generated by the cooling towers. Differences in the water budget between the input and output reflect consumptive use. This wastewater could be disposed of to the existing wastewater treatment system at Paducah, discharged under a KPDES permit, or treated and reused at the conversion facility.

Comment D0030-014

Page 5-69 (line 11): incorrectly references Table 5.2-18 for Table 5.2-17

Response D0030-014

In the Paducah EIS, the reference to Table 5.2-18 has been changed to 5.2-17.

Comment D0030-015

Page 3-15 (3.1.5.1): This sets the current water use at “approximately 15 million gal/d.” However, a January 9, 2004 report entitled Paducah Water Balance Analysis (PGDP, CAB-Water Task Force) sets the total average water flow in at 11.9 million gal/d.

Page 3-15 (3.1.5.1): This states that “during most of the year, most of the flow in both streams (Bayou & Little Bayou) is derived from plant effluents” and that the average discharge to the Ohio River is about 4.1 million gal/d. However, the Paducah Water Balance Analysis puts the water flow out (accounted for) at 10.54 million gal/d.

In this draft DEIS (Paducah) the difference in the ratio of water in to water out is significant. Since the Water Balance-water flow in figure is reflective of the unaccounted for (DEIS) water out this DEIS needs to reconcile water in/water out with water use/water disposal.

Response D0030-015

The results provided in the EISs were based on the most recent qualified data that were available at the time the EISs were prepared. The water balance data that were used were somewhat different from the data mentioned by the commentor. However, even if the data supplied by the commentor were used, the conclusions in the EIS concerning water resources and quality would not change.

Comment D0030-016

The ATSDR Public Health Assessment for Paducah Gaseous Diffusion Plant... May 2002 (pg. 52), identifies thallium as “the contaminant of concern” found in surface water at PGDP. While this DEIS (Paducah) discusses PCB and Uranium as surface water/sediment contaminants, it fails to consider thallium; a significant pollutant, injurious to human health.

Response D0030-016

The May 2002 ATSDR Public Health Assessment for Paducah (ATSDR 2002; available at http://www.atsdr.cdc.gov/HAC/PHA/paducah2/pgd_toc.html) does identify thallium as a contaminant of concern for surface water with the following text: “Thallium is one of the seventeen chemical surface water contaminants and is the only one that has estimated exposure doses that exceed health guidelines. Therefore, thallium is a contaminant of

concern for the surface water pathway and will be discussed further in the following pathway analysis section and in the public health implications section of this report.”

In the subsequent sections of the ATSDR Health Assessment, it is concluded that thallium is NOT a public health hazard at the Paducah site. Thallium is not associated with the conversion facility process and is not addressed in the conversion facility EIS for Paducah.

The following text regarding the public health hazard of thallium is excerpted verbatim from the ATSDR Public Health Assessment for Paducah, May 21, 2002: “Exposure to thallium in off-site surface water and groundwater is not a public health hazard... Thallium was detected in surface water near PGDP. The maximum thallium concentration in surface water was 5,260 µg/L in Bayou Creek near the inactive southwest landfill [45]. Using this maximum concentration, we estimated that incidental ingestion of water from Bayou Creek would result in an exposure dose of 0.001 mg/kg/day for adults and 0.002 mg/kg/day for children 1 to 6 years old. Thallium was not found in drinking water wells, but the lowest level of analytical detection was 10 µg/L--higher than EPA’s drinking water standard of 2 µg/L [155]. Therefore, we used the detection limit of 10 µg/L to estimate exposure doses. This gave us doses of 0.0003 mg/kg/day for an adult and 0.001 mg/kg/day for a child, assuming that these residential wells were the sole source of drinking water. . .The thallium dose that did not cause toxicity to rats (i.e., 0.25 mg/kg/day) was 200 times higher than the maximum exposure dose that ATSDR estimated for surface water or groundwater ingestion, despite the fact that we used very conservative assumptions to estimate dose. . .

Therefore, ATSDR scientists conclude that ingestion of thallium in surface water from Bayou Creek or from drinking water wells located near PGDP is not expected to result in adverse human health effects.”

Comment D0030-017

The combined effect of pollutants is frequently understated in documents such as this (DEIS). One of the reasons often provided is the lack of studies regarding additive, synergistic, or cumulative actions. However, the synergistic interaction of airborne hydrogen fluoride with sulfur dioxide has been well researched. This DEIS (Paducah) anticipates the release of HF to air from the DUF-₆ conversion facility (page 5-61, Table 5.2-15) and describes fairly high sulfur dioxide emission levels from major sources around the Paducah site (page 3-7, Table 3.1-2). This DEIS has not considered the greater adverse-effects expected from the synergistic action of these two pollutants.

Response D0030-017

Both hydrogen fluoride and sulfur dioxide are respiratory irritants and can cause difficulty breathing and damage the respiratory system at higher exposure levels. However, the estimated maximum air concentrations of both HF and sulfur dioxide associated with operation of the conversion facilities are well below their health-based

primary standard levels, even when including background concentrations. (The sulfur dioxide standards are National Ambient Air Quality Standards, the HF primary and secondary standards are Commonwealth of Kentucky Ambient Air Quality Standards. HF levels would also be well below the secondary standards, which are lower but are not based on health considerations). The highest estimated HF ambient level (including background concentrations) would be well below 34% of its associated primary standard level for both conversion facilities. The highest estimated sulfur dioxide ambient levels would be between 17 and 46% of the primary standard level, including background concentrations. No scientific literature was located, indicating that these pollutants would have synergistic health effects at these levels. Based on data reviewed for EIS preparation, the levels that would be associated with facility operations would not cause adverse health effects.

Comment D0030-018

Page 5-69 (re: on site disposal): The permitted life of the on-site C-746-U landfill is less than the expected 25 years of conversion operations. The Accelerated Clean-up Plan waste volumes for PGDP also exceed the permitted capacity of that landfill. The C-746-U landfill is owned by DOE. If Uranium Disposition Services, LLC is a private/stand alone company, ultimately responsible for products produced as well as waste generated, disposal in the C-746-U landfill should be fee based, identical to any similar landfill. THE C-746-U LANDFILL IS A VERY CONTINUOUS COMMUNITY ISSUE.

Response D0030-018

UDS will use the on-site disposal facilities for construction debris and soils. After construction, UDS has no plans to use on-site disposal facilities. Financial arrangements between DOE and UDS are outside the scope of the EIS.

Comment D0030-019

Past “self regulation” of PGDP, by DOE, has ultimately created an extreme example of a Superfund site that will remain a toxic legacy for generations to come. Uranium Disposition Services, LLC (Paducah) should be the owner/ operator of the conversion facility; responsible for all air, water, and land permits.

Response D0030-019

Pursuant to the DUF₆ conversion contract between DOE and UDS, UDS is required to obtain all permits and other regulatory approvals needed to construct and operate the DUF₆ conversion facilities. UDS is also required to comply with all applicable laws, which typically require the operator of a facility to sign applicable permit applications. To the extent DOE is also required to sign permit applications as the owner of the facility, DOE will do so and comply with the law. The commentor’s preference to designate UDS as the owner/operator of the conversion facility at Paducah is noted, but

the issue of which entity should sign permit applications is dictated by state and federal regulations.

COMMENTOR D0031: **Karen Stachowski, Deputy Commissioner**
Tennessee Department of Environment and Conservation

Comment D0031-001

The Department of Energy is under a final Order regarding the depleted uranium hexafluoride (DUF₆) cylinders at the East Tennessee Technology Park in Oak Ridge. That Order requires that all of the cylinders be removed by December 31, 2009. All actions of the Department of Energy, in regard to the cylinders, should be consistent with that deadline, including the statements in the Environmental Impact Statement.

Response D0031-001

DOE acknowledges the consent order with the Tennessee Department of Environment and Conservation and its requirements in each site-specific conversion EIS (see Sections S.1.1.2 and 1.1.2). DOE is committed to complying with the 1999 consent order requiring the removal of the DUF₆ cylinders from the ETTP site or the conversion of the material by December 31, 2009.

Comment D0031-002

...at this time we support the option of over-packing any cylinders that do not meet DOT transportation requirements. We do not view any other option as having been adequately studied or evaluated in a NEPA process.

Response D0031-002

Comment noted. The two conversion facility EISs identify three possible options for shipping cylinders that do not comply with DOT requirements for the shipment of UF₆: (1) transferring the contents to compliant cylinders (likely requiring a new facility); (2) obtaining an exemption from DOT to ship the cylinders "as is," provided that DOE can demonstrate a level of safety that would be at least equal to the level required by the regulations; and (3) transporting the cylinders in a protective overpack.

At present, a Transportation Plan for shipment of noncompliant cylinders has not been finalized and DOE is evaluating the available options. Consequently, the EISs provide an evaluation of these options. It should be noted that all shipments must be made in compliance with DOT regulations, regardless of the specific approach selected. Thus, in terms of potential environmental impacts during transportation, no option is clearly preferable.

DOE recognizes that if a decision is made to transfer the contents of noncompliant cylinders to compliant cylinders and a new facility is required at ETTP, then additional NEPA review would be conducted.

COMMENTOR D0032: **John Owsley, Director**
Tennessee Department of Environment and Conservation

Comment D0032-001

The state of Tennessee concurs with the proposed action for managing the ETTP cylinder inventory. We defer comments on siting and operational alternatives at DOE Paducah and DOE Portsmouth to the commonwealth of Kentucky and the state of Ohio respectively.

Response D0032-001

Comment noted.

Comment D0032-002

We do not expect to compromise environmental quality in another state in order to benefit our own. We will continue to talk about UF₆ with Ohio and Kentucky like we have for the past several years.

Response D0032-002

Comment noted. DOE is committed to continued cooperation with the States of Ohio, Kentucky, and Tennessee, and to complying with the requirements specified in the applicable consent orders.

Comment D0032-003

The DEIS documents were reviewed with the Tennessee Consent Order No.97-0378-H0023 Part IX of the Uranium Hexafluoride Management Plan in focus, which states “By (July 31, 1999), DOE shall issue its record of decision (ROD) for the final Programmatic Environmental Impact Statement for Alternative Strategies for the long-term management and Use of Depleted Uranium Hexafluoride (PEIS). Unless DOE selects the no action alternative in the ROD, DOE shall either remove all known DUF₆ cylinders and their contents from ETTP or complete the conversion of the contents of the cylinders by (December 31, 2009). In this event, DOE may undertake additional National Environmental Policy Act reviews (EAs/EISs) in order to implement the alternative selected in the ROD. Within 60 days of completing any such further NEPA reviews as may be necessary to implement the selected long-term management strategy, DOE shall submit a plan containing schedules for activities that will ensure removal of all known DUF₆ cylinders and their contents from ETTP or conversion of the contents of such cylinders will be completed by December 31, 2009. The schedule contained in the plan shall be considered an enforceable provision of this Agreement.”

These documents should state that DOE shall submit this schedule within 60 days of completing this EIS. Any associated references (summaries, etc) should be changed accordingly.

Response D0032-003

For information purposes, text has been added to Section 1.1.2 of both the Paducah and Portsmouth EISs to indicate the requirement in the Consent Order for DOE to submit the schedule within 60 days of completion of the NEPA process.

Comment D0032-004

Section 1, Introduction, 2.1, No Action Alternative, 2.4.1 General: Both EIS's evaluate a no action alternative that assumes continued storage of cylinders at Portsmouth, Paducah, and ETTP. These documents should state that the Tennessee Consent Order requires conversion or removal of UF₆ cylinders from ETTP by the end of 2009 because DOE did not select the no action alternative in the PEIS ROD of April 1999.

Response D0032-004

In its NEPA regulations, the CEQ requires that the alternatives analysis in an EIS "include the alternative of no action" [Section 1502.14(d)]. Accordingly, the regulations require the analysis of the no action alternative even if the agency is under a court order or legislative command to act. In guidance, the CEQ explains that this analysis provides a benchmark, enabling decision makers to compare the magnitude of environmental effects of the action alternatives. Also, according to the CEQ guidance, no action is an example of a reasonable alternative outside the jurisdiction of the agency that must be analyzed. Inclusion of such an analysis in the EIS is necessary to inform the Congress, the public, and the President as intended by NEPA. Hence, the CEQ requires that DOE include analyses of a no action alternative in the EISs for the conversion facilities at both Portsmouth and Paducah, and DOE's compliance with this requirement should not be viewed as inconsistent with its April 1999 ROD regarding long-term management of DUF₆.

Furthermore, DOE is committed to honoring the 1999 Tennessee Department of Environment and Conservation consent order, which requires either the removal of the DUF₆ cylinders from the ETTP site or the conversion of the material by December 31, 2009. Toward that end, the DOE contract for accelerated cleanup of the ETTP site, including removal of the DUF₆ cylinders, calls for completion of this activity by the end of FY 2008.

Comment D0032-005

Section 1.2.1. Table 1.1-1 Inventory of DOE UF₆ Cylinders Considered in This[sic] EIS: The tables list the proposed action for shipment of all ETTP cylinders to Portsmouth. According to the table this includes 584 empty cylinders. Most of these empty cylinders have already been shipped to NTS. Some empty 48-inch cylinders remaining at ETTP will probably be shipped to

Portsmouth. The table is footnoted to show that the numbers are as of April 30, 2003. Updated data should be used in the final Portsmouth and Paducah documents.

Response D0032-005

The cylinder inventory numbers have been updated in the Final EISs to reflect the most current information from the Cylinder Information Databases to account for changes that occurred after release of the draft EISs. The updated inventories are provided in Table 1.1-1 of each site-specific document. Potential areas of impact have been updated accordingly.

Comment D0032-006

Section 2.2.4 Preparation and Transportation of ETTP Cylinders, Pg. 2-18; Section 5.2.4 Cylinder Preparation Impacts at ETTP:

The statement is made in 2.2.4 that “It is unknown exactly how many DUF₆ cylinders do not meet DOT transportation requirements.” In 5.2.4, the evaluation referenced in the DUF₆ PEIS (DOE 1999a) indicates that 50% to 100% of the ETTP inventory would not meet DOT requirements. The current documents should be updated to show the number of DUF cylinders that will be shipped initially without extra preparation such as overpacks or transfer of contents.

Response D0032-006

As stated in Section 2.2.4 of both EISs, at this time it is unknown exactly how many of the DUF₆ cylinders at ETTP do not meet DOT transportation requirements. The DUF₆ Programmatic EIS assessment for cylinder preparation for shipment evaluated from half to all of the DUF₆ cylinders at ETTP not meeting DOT shipping requirements, but this was an assumption made for the purposes of analysis. More recently, a supplement analysis for transport of compliant DUF₆ cylinders from ETTP evaluated the impacts of transporting up to 1,700 DOT-compliant cylinders (see Section 1.7 of either EIS).

Prior to shipment of any cylinder from ETTP, the cylinder would receive a thorough inspection, including a record review to determine if the cylinder is overfilled, a visual inspection for damage or defects, a pressure check to determine if the cylinder is overpressurized, and an ultrasonic wall thickness measurement (if necessary based on the visual inspection).

These two conversion facility EISs identify three possible options for shipping cylinders that do not comply with DOT for the shipment of UF₆: (1) transferring the contents to compliant cylinders (likely requiring a new facility); (2) obtaining an exemption from DOT to ship the cylinders “as is,” provided that DOE can demonstrate a level of safety that would be at least equal to the level required by the regulations; and (3) transporting the cylinders in a protective overpack. A Transportation Plan will be developed for each shipping program related to the DUF₆ conversion facility program. Each Plan is developed to address specific issues associated with the commodity being shipped, the

origin and destination points, and concerns of jurisdictions transited by the shipments. In all cases, DOE-sponsored shipments comply with all applicable state and federal regulations and are reflected in many of the operational decisions made and presented in the Plan. The transportation regulations are designed to be protective of public health and safety during both accident and routine transportation conditions.

Comment D0032-007

Section 2.2.5, Preparation and Transportation of ETPP Cylinders to Portsmouth, Page S-21, Second Paragraph, Line 8: There are “no current plans” for a new cylinder transfer facility at ETPP. If such a facility was to be further considered, the state of Tennessee would expect to be notified through the NEPA process of such plans as soon as they reach the stage of serious consideration. Due to the nature of the operation (purging of deteriorating cylinders, and subsequent refilling of more substantial cylinders) the environmental risk posed by this type of facility to the environment of the state of Tennessee and the East Tennessee Technology Park has the potential to be substantial. The state of Tennessee requires that the cylinders be shipped in a DOT-compliant manner using over-pack containers, if necessary. This applies even if the cylinders are shipped by a different mode of transportation to Paducah.

Response D0032-007

Comment noted. The two conversion facility EISs identify three possible options for shipping cylinders that do not comply with DOT requirements for the shipment of UF₆: (1) transferring the contents to compliant cylinders (likely requiring a new facility); (2) obtaining an exemption from DOT to ship the cylinders “as is,” provided that DOE can demonstrate a level of safety that would be at least equal to the level required by the regulations; and (3) transporting the cylinders in a protective overpack.

At present, a Transportation Plan for shipment of noncompliant cylinders has not been finalized and DOE is evaluating the available options. Consequently, the EISs provide an evaluation of these options. It should be noted that all shipments must be made in compliance with the DOT regulations, regardless of the specific approach selected.

DOE recognizes that if a decision were made to transfer the contents of noncompliant cylinders to compliant cylinders and a new facility is required at ETPP, then additional NEPA review would be conducted. The State would be notified of any such plans, if they were to reach the stage of serious consideration.

Comment D0032-008

Section 2.3.5., Other Transportation Modes, Page 2-25: 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.

Response D0032-008

The two conversion facility EISs evaluate transportation by both highway and rail modes in detail. Transportation by air and barge were considered, but not evaluated in detail for the reasons provided in Section 2.3.5 of each EIS (see also the response to Comment D0017-001 with respect to barge shipments). The detailed evaluation of only truck and rail modes in the Final EISs does not preclude the use of other modes in the future. However, if an alternative transportation mode was proposed in the future, additional NEPA review would be conducted. Such a review would address all issues associated with the proposed activity.

Comment D0032-009

Section 2.4.2.3, Human Health and Safety – Transportation: This section shows the two highest potential accidents to involve either NH₃ or HF shipments. It should be expanded to show that there is also transportation risk connected with shipping UF₆ cylinders from ETTP to the selected conversion sites.

Response D0032-009

The risks associated with shipping UF₆ cylinders from ETTP to the selected conversion sites are included in the EISs. The risks from UF₆ transportation, during routine conditions and accidents, are presented in detail in Section 5.2.5 of each EIS. The analysis shows that the potential consequences of an accident involving DUF₆ cylinders during transport from ETTP are lower than the consequences of an accidental release of NH₃ or aqueous hydrogen fluoride during shipment. Text has been added to Section 2.4.2.3 to indicate where in each document the accident risks from UF₆ cylinder shipments are discussed.

Comment D0032-010

Section 3.2.7.1 Radiation Environment, Page 3-56, Line 3: states that “*radiation exposure of the general public MEI (Maximally Exposed Individual) is estimated to be 6.7 mrem/yr. This dose is about 7% of the maximum dose limit of 100 mrem/yr set for the general public (DOE 1990) and much smaller than the average dose from natural background radiation in the state of Tennessee. The actual radiation exposure of the general public would be much lower than the estimated maximum value.*” The state would like to point out that these dose estimates to the general public provided by the document are very scenario-dependent. The state’s UF₆ Cylinder Yard Monitoring Project recorded a 2002 direct gamma dose of 9,539 mrem/yr at the fence line of the K-1066-L yard. While the state’s dose measurement in this instance is the result of continuous monitoring (twenty four hours per day, 365 days) and reflects direct gamma dose only, the relative openness of the ETTP site to co-located workers from private companies, and the plans to further open the ETTP site to the public leave many previous assumptions about dose estimates in question.

Response D0032-010

To address the potential radiation exposures resulting from the cylinder yards, the following text has been added to Section 3.2.7.1, 1st paragraph - “The estimated dose of 6.7 mrem/yr for the MEI was based on the assumption that the off-site public would not be in the immediate vicinity of the cylinder yards for any appreciable time, which is the case under normal conditions. However, potential external exposure could occur and reach 100 mrem/yr if an off-site individual spends more than 90 hours a year immediately at the cylinder yard fence line.”

Comment D0032-011

Section 5.2.3.1.1 Radiological Impacts, Page 5-61, Fourth Paragraph, Line 2 states that “*for the first 2 years, because of receiving, inspecting and putting the ETTP cylinders into storage position, the potential radiation exposures are expected to be greater than in following years.*” This should be changed to reflect the fact that only ANSI-N14.1 compliant cylinders will be shipped during the first 2 years and the total shipping campaign will take approximately twice that long resulting in higher potential radiation exposures for a longer time period.

Response D0032-011

The estimated total collective worker doses from handling the ETTP cylinders at the receiving site would be the same regardless of the duration of the shipment campaign. However, the annual collective dose depends on the duration of the campaign. As stated in Section 5.2.3.1.1, all cylinders must be removed from the ETTP site by December 31, 2009; however, for the purpose of providing conservative estimates of annual impacts, the shipment of all ETTP cylinders was assumed to occur over 2 years. The dose results presented in Section 5.2.3.1.1 for cylinder yard workers reflect this assumption. Assuming a longer shipment campaign would result in a smaller estimated annual dose to cylinder yard workers, although the total dose over the duration of the activity would be the same.

In estimating the radiation exposures from handling the ETTP cylinders at the receiving sites, steps involved in retrieving the cylinders from the transport vehicle and placing them in temporary storage on site were considered. It was assumed that if the cylinders were transported in protective overpacks, they would be removed from the overpack before being put into storage. As a result, the worker doses would be expected to be slightly higher when the cylinders are shipped in overpacks. However, in the analyses conservative assumptions were employed to bound the worker doses under either transportation option and no distinctions were made between the two options.

The text in Section 5.2.3.1.1 has been modified to clearly indicate that the ETTP cylinders must be removed from the site by December 31, 2009, and that a 2-year shipping campaign was assumed to bound the estimated annual impacts to cylinder yard workers. It should be noted that the DOE contract for accelerated cleanup of the ETTP

site, including removal of the DUF₆ cylinders, calls for completion of this activity by the end of FY 2008.

COMMENTOR D0033: Ruby English

Comment D0033-001

Comment Period was Extended to: February 4, 2004 by Department of Energy

Response D0033-001

As a matter of record, the comment period officially ended on February 2, 2004, as originally announced in the Notice of Availability published in the *Federal Register* (November 28, 2003) and as presented at the three public hearings held in January 2004. The comment period was not officially extended to February 4 by the Department of Energy. However, comments received after February 2 were considered to the extent practicable in preparation of the final EISs.

Comment D0033-002

Thank you for allowing me the opportunity to comment on such an important topic, the construction of a DUF₆ Conversion Facility to be located at Paducah, KY. As you know, I am a neighbor of the Paducah Gaseous Diffusion Plant and have always tried to comment on topics you have let me know about and I always try to do it in a civilized manner.

Response D0033-002

Comment noted. DOE appreciates public and stakeholder involvement and is committed to addressing local community concerns in a constructive manner.

Comment D0033-003

I understand about the conversion plant being built here and employing some of the workers that will be laid off when USEC closes. Since this is a rural community and the high paying jobs are not around here this plant would be good for the few people that will be successful in securing those positions. But, I also understand that when all or most of the current and former workers begin developing health problems then that will be another story.

Response D0033-003

The conversion facility project will be conducted with a commitment to keeping workers and the public healthy and safe as well as minimizing impacts to the environment. All applicable health and safety regulations will be complied with; this results in keeping worker exposures to radiation, chemicals, and physical hazards at low levels. Wherever possible, reactions in the conversion process will be automated and contained in closed vessels so that workers will not be exposed (this will particularly limit exposures to

dusts). Workers with the possibility of contacting radioactive materials will wear radiation dosimeters so that individual exposures can be monitored and controlled to remain at low, health-protective levels.

The EISs include detailed evaluations of the potential impacts to human health and safety, including workers directly involved in conversion facility operations, other workers located at the sites, as well as members of the public living around the sites. The EISs consider exposures to not only depleted uranium compounds but also other chemicals used in the conversion process and by-products of conversion. In the Paducah EIS, potential health and safety impacts during operations are discussed in Sections 5.2.2.1 and 5.2.2.2 for routine conditions and accidents, respectively. In the Portsmouth EIS, potential health and safety impacts during operations are discussed in Sections 5.2.3.1 and 5.2.3.2 for routine conditions and accidents, respectively. The results of the analyses indicate that the risks to human health and safety are expected to be low and well within applicable limits and regulations.

Comment D0033-004

The continued storage of the current DUF₆ cylinders indefinitely will eventually cause you more of a problem if these are not moved and disposed of due to continued exposure. There are more accidents at the Paducah Gaseous Diffusion Plant each year than is reported. One day this plant will cause an accident that will affect this whole area if these cylinders are not cleaned up. Then, I look at the health aspect for the neighborhood and wonder how much more The Department of Energy is going to put on us.

Response D0033-004

The proposed action considered in the two site-specific conversion EISs is to construct and operate plants to convert the DOE's inventory of DUF₆ to a more stable chemical form for use or disposal, thereby eliminating the need to continue to store cylinders indefinitely. Problems associated with continued long-term storage are evaluated under the no action alternative, as required by NEPA. The no action alternative includes evaluation of accidents involving cylinders during long-term storage. Conversion of the DUF₆ inventory will decrease the probability of cylinder accidents by decreasing the number of cylinders in storage.

All accidents and incidents at the plants are reported as required to appropriate federal and state agencies.

Comment D0033-005

So money wise this plant will be a good thing. Health-wise this plant addition will only cause more health problems for the neighborhood and the community.

Response D0033-005

DOE is committed to accomplishing the conversion and disposition of its depleted uranium hexafluoride inventory in a manner protective of the workforce, the public, and the environment. The EISs provide a comprehensive evaluation of the potential impacts to human health in the vicinity of the plant in Chapter 5. The results of the human health evaluation indicate that potential impacts from plant operations will be low and well within applicable regulations designed to be protective of human health and the environment.

Comment D0033-006

Transportation will be another problem, because you will not only clean-up cylinders at the Paducah site, but, you will be shipping in cylinders from other locations. These cylinders will be traveling on our roads and rails, possibly down our rivers. There could be accidents and then this would endanger the public. Hexafluoride is dangerous to our health. I also want to know about the disposal of the cylinders as to where they will go. My concern is in the landfill behind my house. Is that the plan?

Response D0033-006

The proposed action considered in the two site-specific conversion EISs is to ship the DUF₆ cylinders at the ETTP site near Oak Ridge, Tennessee, to the Portsmouth site. Thus, there is no current proposal to ship cylinders to the Paducah site. However, as a reasonable alternative under NEPA, the EISs evaluate the shipment of ETTP cylinders to Paducah as well. The transportation analysis for the alternative of shipping ETTP cylinders to the Paducah site is provided in Section 5.2.5 of the Paducah EIS.

The transportation of DUF₆ cylinders and conversion products is an important component of the proposed action and does pose potential risks during routine transportation operations and from accidents, as noted by the commentor. Consequently, the two conversion facility EISs include evaluation of the risks associated with the transportation of radioactive and hazardous materials, including depleted uranium hexafluoride, depleted uranium oxide, hydrogen fluoride, and anhydrous ammonia. In the Portsmouth EIS, potential transportation impacts are discussed in Sections 5.2.5 and 5.2.7. In the Paducah EIS, transportation impacts are discussed in Sections 5.2.3 and 5.2.5. The transportation analysis includes evaluation of risks caused by normal operations, as well as risks from accidents. The analysis considers both vehicle-related risks (i.e., risks related to vehicle operation, such as the potential for accidents causing injuries and fatalities) and cargo-related risks.

It should be noted that, regardless of the transport mode, all shipments must comply with DOT regulations, as specified in Title 49 of the *Code of Federal Regulations*. These regulations are designed to be protective of public health and safety during both accident and routine transportation conditions.

With respect to the disposal of cylinders, the emptied cylinders would not be disposed of in landfills at the Paducah or Portsmouth sites. As described in the EISs (Section 2.2.2 in the Portsmouth and Paducah EISs), current plans call for the emptied cylinders to be reused as disposal containers for the depleted uranium conversion product. As such, they would be disposed of with the depleted uranium at a LLW disposal facility, such as Envirocare of Utah or the NTS. The EISs also consider the alternative of using bags for disposal of the depleted uranium product. Under this alternative, the emptied cylinders would be crushed and shipped off site to a LLW disposal site.

Comment D0033-007

I also want to know about the waste from the DUF₆ plant being built in New Mexico by Louisiana Energy Systems. Is the Department of Energy going to be responsible for waste that is produced from this plant. If so they be shipped to Paducah?

Response D0033-007

At the present time, there are no plans or proposals for DOE to accept DUF₆ cylinders for conversion beyond the current inventory for which it has responsibility. However, Section 2.2.7 of the Portsmouth site-specific conversion facility EIS and Section 2.2.5 of the Paducah EIS discuss a number of possible future sources of additional DUF₆ that could require conversion, including a new commercially operated enrichment facility in New Mexico. The potential environmental impacts associated with expanding plant operations (including extending operations and increasing throughput) to accommodate processing of additional cylinders are discussed in Section 5.2.8 of the Portsmouth EIS and Section 5.2.6 of the Paducah EIS. Because of the uncertainty associated with possible future sources of DUF₆ for which DOE could assume responsibility, there is no current proposal to ship cylinders from a new commercial enrichment plant to Paducah. If such a decision was made in the future, additional NEPA review would be conducted.

Comment D0033-008

From everything that I am reading it seems the plan is for the EPA to lower the standards for the landfills and then DOE will dispose or material in these landfills that should never be put there. This has already happened at the Paducah site and I am sure it could and will happen again.

Response D0033-008

As discussed in each site-specific EIS, all wastes generated under the proposed action would be stored, treated, and disposed of in accordance with all applicable regulations, as appropriate. These regulations are intended to be protective of human health and the environment. The depleted uranium conversion product, emptied cylinders, and radioactively contaminated waste will be disposed of in off-site LLW disposal facilities, such as Envirocare of Utah and the NTS. Also see Response to Comment No. D0033-006.

With reference to the changes in the Waste Acceptance Criteria (WAC) for the C-746-U Landfill, the commentor is correct that there has been a change in the WAC for placement of solid waste in that landfill, but the standards have not been “lowered.” The change in the WAC involved application of DOE's authorized limits criteria pertaining to management of radionuclides. The original permit for Paducah's C-745-U landfill operation allowed placement of solid waste with up to 35 pCi/g of uranium on a case-by-case basis. No other radionuclides were addressed in the permit. The current WAC require analysis of all exposure pathways for all known radionuclides and require that disposal of solid waste will not result in additional exposure to the public greater than 1 mrem/yr. This criterion is significantly less than (i.e., more protective than) the EPA administrative standard of 15 mrem/yr additional exposure to the public and the 10 CFR Part 835 Rule that requires additional exposure to the public be less than 100 mrem/yr.

Comment D0033-009

I don't really know what else to say, because, I think, decisions and agreements have already been made and any thing else I could say would not make much difference. I hope that you will seriously consider and think about the decisions you make that at least take the thought of what is good for the neighborhood and the worker's. I know you have to make money, but please don't do it at the expense of human life. There has already been more than enough lives taken due to health problems caused by the misguided management that has been at this plant in the past. Please do something good for the community and build and operate a clean plant. The imaginary fences are not there and the contaminants don't stop at the fence either. The landfills are already leaking, so any additional dumping will only endanger us that much more.

Response D0033-009

There are no definitive data supporting an assertion that the landfills are leaking. Groundwater contaminants have been detected in some samples from wells in the vicinity of the C-746-S and -T landfills. Some contaminant concentrations from these wells have exceeded the maximum concentration level (MCL) for drinking water standards of 5 µg/L of TCE. Because the data are from wells both upgradient and downgradient from the landfills, it is not clear whether the source of contaminants is from the plant or from the landfills. The October 2003 Agreed Order between the Commonwealth of Kentucky and DOE requires that DOE pursue a field investigation to determine whether the C-746-S and -T landfills are a source of the groundwater contamination.

Public and stakeholder involvement is an important component of the DOE Depleted Uranium Hexafluoride Management Program's NEPA activities. DOE takes all public input into the process seriously, and all comments received on the draft EISs were considered in preparation of the final EISs. The program NEPA activities are an important and necessary component of the DOE decision-making process.

DOE is committed to constructing and operating the conversion facilities in a manner protective of the workers, the public, and the environment. The EISs include detailed

evaluations of the potential impacts to human health and safety, including workers directly involved in conversion facility operations, other workers located at the sites, as well as members of the public living around the sites. In the Paducah EIS, potential health and safety impacts during operations are discussed in Sections 5.2.2.1 and 5.2.2.2 for routine conditions and accidents, respectively. In the Portsmouth EIS, potential health and safety impacts during operations are discussed in Sections 5.2.3.1 and 5.2.3.2 for routine conditions and accidents, respectively. The results of the analyses indicate that the risks to human health and safety are expected to be low and well within applicable limits and regulations.

As discussed in the response to Comment Nos. D0033-06 and D0033-008, all wastes generated under the proposed action would be stored, treated, and disposed of in accordance with all applicable regulations, and radioactively contaminated waste would be disposed of in off-site LLW disposal facilities, such as Envirocare of Utah and the NTS.

Comment D0033-010

This Paducah Site will become a dumping ground for all waste good or bad that other locations will want to ship to Paducah if you let them. So let me know what your decision will be and May God Bless.

Response D0033-010

There are no plans to ship wastes from other sites to Paducah for disposal. In fact, the Paducah Part B permit for interim storage of RCRA waste does not permit receipt of waste from any other site.

With respect to the potential construction and operation of a Paducah conversion facility, the depleted uranium conversion product, emptied cylinders, and radioactively contaminated waste would be disposed of off site at a LLW disposal facility. DOE will announce the decision on construction and operation of DUF₆ conversion plants at the Paducah and Portsmouth sites in RODs to be published no sooner than 30 days after publication of the final EISs. Availability of the RODs will be announced in the *Federal Register* and posted on the project Web site at <http://web.ead.anl.gov/uranium/>.

COMMENTOR D0034: **Mueller, Heinz J.**
 U.S. Environmental Protection Agency, Region 4

Comment D0034-001

When regulatory compliance is discussed in this document, the radionuclide National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Radionuclide Emissions for United States Department of Energy (USDOE) Owned or Operated Facilities, in 40, CFR 61, Subpart H, is not always adequately referenced. Please include this information in the FEIS.

Response D0034-001

In the final EIS, text has been added to the human health and safety sections of the summary (Section S.5.1) and the comparison of alternatives (Section 2.4.2.1) to clearly identify that the assessment results were in compliance with regulatory requirements, including those of 40 CFR 61, Subpart H.

In Chapter 6 of the draft and final EIS (regulatory requirements), Table 6.1 identifies that the conversion facility is subject to the requirements of 40 CFR 61, Subpart H. Similarly, compliance with 10 CFR 61 requirements is explicitly identified in the draft and final EIS human health and safety sections for the no action alternative (Sections 5.1.2.1.1 and 5.1.3.1.1) and for the action alternatives (Sections 5.2.3.1.1).

Comment D0034-002

The EIS should include information regarding the capability and capacity for the two disposal facilities mentioned in the DEIS, namely Envirocare and the Nevada Test Site (NTS), to accept the proposed waste products from the Paducah conversion facility. The disposal facilities must meet both the Waste Acceptance Criteria (WAC) limits, as well as have the physical capacity to accept the proposed quantity of conversion product waste.

Response D0034-002

As Section 1.6.2.4 in the EIS states, studies conducted by ORNL for DOE have shown that both NTS (a DOE facility) and Envirocare of Utah, Inc. (a commercial facility) would be acceptable disposal facilities for depleted uranium (Croff et al. 2000a,b). These studies included reviews of the LLW acceptance programs and disposal capacities of both the NTS and Envirocare of Utah, Inc. and concluded that either facility would have the capacity needed to dispose of all the products from the proposed DOE DUF₆ conversion program, and that the materials sent to these facilities would be able to meet each site's waste acceptance criteria. Additionally, in its proposal to design, construct, and operate the DUF₆ conversion facilities, UDS provided evidence that both sites could accept the U₃O₈ and identified the Envirocare facility as the primary and NTS as the secondary disposal site. DOE plans to decide the specific disposal location(s) for the depleted U₃O₈ conversion product after additional appropriate NEPA review. Accordingly, DOE will continue to evaluate its disposal options and will consider any further information or comments relevant to that decision. DOE will give a minimum 45-day notice before making the specific disposal decision and will provide any supplemental NEPA analysis for public review and comment.

Comment D0034-003

Based on the review of the DEIS, the project received a rating of "EC-1," meaning that some environmental concerns exist regarding aspects of the proposed project. Because of the chemical and radioactive nature of the materials processed and produced, safety measures and prevention of potential impacts to on-site workers and public health are areas of primary concern.

Specifically, protecting the environment and human health involves the need for appropriate operation and safety measures, monitoring, short-term storage, packaging, and transportation and sale or disposal of conversion products.

Ongoing radiological monitoring will be required during operation of this facility. Also, appropriate short-term storage of radioactive wastes on-site is required in order to prevent impacts to workers, the public, and the environment. With regard to LLW disposal, the DEIS covers the impacts from the transporting of conversion products to both the Envirocare of Utah, Inc. facility, and Nevada Test Site (NTS) from the proposed conversion facility in Paducah. Construction of the facility could potentially result in minor impacts to wetlands. Overall, the impacts as defined in the DEIS appear to be within acceptable limits.

Response D0034-003

The EPA concerns are noted. Because of the chemical and radioactive nature of the material, DOE is committed to accomplishing the conversion and disposition of its depleted uranium hexafluoride inventory in a manner protective of the workforce, the public, and the environment. DOE is further committed to complying with all applicable regulatory requirements concerning processing, storage, and disposal. DOE concurs with the assessment that overall impacts will be within acceptable limits.

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