February 23, 2005

Mr. Steven A. Toelle
Director, Nuclear Regulatory Affairs
USEC Inc.
6903 Rockledge Drive
Bethesda, Maryland 20817-1818

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION ON THE USEC INC. PROPOSED AMERICAN CENTRIFUGE PLANT ENVIRONMENTAL REPORT (TAC NO. L32307)

Dear Mr. Toelle:

The U.S. Nuclear Regulatory Commission staff and their contractor, ICF Inc., have reviewed the "Environmental Report for the American Centrifuge Plant in Piketon, OH," dated August 23, 2004. Attached are requests for additional information which are necessary to complete our environmental review. The requested information is listed by chapter number and title in the subject Environmental Report.

In order to meet the current schedule, which requires us to prepare the Draft Environmental Impact Statement by July 2005, we need to receive your responses to this request within 30 days. If you have any questions, please contact Matthew Blevins at (301) 415-7684.

Sincerely,

**/RA/**

Jennifer Davis, Chief
Environmental and Performance
Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Nuclear Material Safety
and Safeguards

Docket: 70-7004

cc: See Attached List

Attachment: Request for Additional Information

cc:

William Szymanski/DOE

Dan Minter/SODI

James Curtiss/W&S

Rod Krich/LES

Rocky Brown/Mayor of Beaver

Billy Spencer/Mayor of Piketon

Harry Rioer/Pike Co. Commissioner

Larry Scaggs/Seal Twp.Trustee

Kara Willis/ Gov. Taft's Reg. 7 office

Mary Glasgow/Cong. Portman

Donald Silverman/Morgan Lewis

Lindsay Lovejoy/NIRS

Vina Colley/PRESS

Elisa Young

Michael Marriotte/NIRS

Carol O'Claire/Ohio EMA

Randall DeVault/DOE

Peter Miner/USEC Inc.

Garry Hager/SPFPA/USEC

Jim Brushart/Pike Co. Comm. Chair.

Teddy West/Scioto Twp. Trustee

Ted Wheeler/Pike County Auditor

Robert Huff/Portsmouth CoC

Marvin Jones/Chillicothe CoC

Roger Suppes/Ohio DoH

Patricia Marida/Ohio Sierra Club

Ewan Todd

Geoffrey Sea

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|---|---|---|---|---|
| **NAME** | MBlevins | | JDavis | |
| **DATE** | 02/18/05 | | 02/23/05 | |

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**REQUEST FOR ADDITIONAL INFORMATION**
**USEC INC. AMERICAN CENTRIFUGE PLANT ENVIRONMENTAL REPORT**
**DATED AUGUST 23, 2004**

The U.S. Nuclear Regulatory Commission's (NRC's) general requirements for a draft environmental impact statement (DEIS) are delineated in 10 CFR 51.70. Pursuant to 10 CFR 51.70(b), the NRC staff is required to prepare a DEIS that: (1) is concise, clear, analytical, and written in plain language, and (2) states how the alternatives considered in the DEIS and decisions based on it will achieve the requirements of Sections 101 and 102(1) of the National Environmental Policy Act. Appendix A of 10 CFR Part 51 describes the general format the NRC staff will use in preparing the DEIS.

To prepare a DEIS consistent with the requirements of 10 CFR 51.70, certain information is required. The applicant is required to provide an environmental report (ER) in accordance with 10 CFR 51.45 which satisfies the information requirement. The NRC staff is required to independently review the information in the ER and prepare a DEIS. The staff has reviewed the applicant's ER (Revision 0) dated August 23, 2004 and determined that additional information is necessary to prepare a DEIS that satisfies the requirements of 10 CF 51.70.

Although the License Application is for a 3.5 million separative work unit (SWU) plant, page 1 of the ER states that the ER examines the impacts of an annual capacity of 7 million SWU. Based on this information, the NRC staff plans to limit the DEIS to an analysis of a 7 million SWU plant, which should bound the impacts of the proposed action involving a 3.5 million SWU plant. Accordingly, please provide responses to all requests for additional information that clearly describe proposed actions and potential impacts for a 7 million SWU plant.

## SECTION 1 – INTRODUCTION

Pursuant to the 10 CFR 51.45(b), the ER is required to contain a description of the proposed action and affected environment. In addition, pursuant to 10 CFR 51.45(d), the ER is required to list all the Federal permits, licenses, approvals, or other entitlements which must be obtained in connection with the proposed action and must describe the status of compliance with these requirements.

### 1-1 Maps and Figures:

A. Provide hard copy maps (5 sets) in "E" size (34" by 44") with a north arrow and scale that display the following features. These maps would not be released to the public (and thus do not need to be purged of proprietary or secure information), but are required to assist in assessing impacts on specific resources.

1.) All existing buildings and cylinder storage yards that will be used for the ACP and all new buildings and cylinder storage yards that will be constructed for the ACP; please provide hatching to distinguish the location of the existing facilities from the new facilities.

2.) Figure 1.0.1-2 originally included in the ER modified to also show the locations of water supply wells, water supply pipelines to the onsite distribution center, and power lines.
3.) The location of the 14 archaeological sites and two historic area cemeteries that may be eligible for listing in the national register, as referenced in Section 3.8.1, page 3-62.
4.) Figure 3.5.4-1 originally included in the ER modified to show the locations of the Indiana Bat Habitat in relation to the closest ground-disturbing activity associated with the proposed action (e.g., construction of cylinder storage yard X-745H).

- The maps in the ER do not consistently show the same existing facilities and the same proposed new facilities associated with the proposed action. They also do not show the location of basic utilities, the 14 archaeological sites, and the two historic area cemeteries. Figure 3.5.4-1 displays the location of the bat habitat in relation to only one ground-disturbing activity associated with the proposed action, even though it appears that other ground-disturbing activities would be closer.

B. Provide a series of maps that have the same background information shown on Figure 3.4.2-1, including the north arrow and scale, minus any proprietary information, plus all existing building and cylinder storage yards that will be used for the ACP hatched one way, plus all new buildings and cylinder storage yards that will be constructed for the ACP hatched another way, and plus the specific features listed below. If possible, please provide electronic files in AutoCADD format; if that is not possible, please provide jpg images that can be inserted into a WordPerfect file. The following maps should be appropriate for release to the public in the DEIS.
1.) Figure 1: Proposed location of DOE's $UF_6$ conversion facility on the reservation (adapted from Figure 3.1-2).
2.) Figure 2: Stormwater drainage associated with the proposed action (adapted from Figure 4.4.3-1).
3.) Figure 3: National Pollutant Discharge Elimination System (NPDES) discharge locations and associated buildings/areas that discharge/drain to those outfalls (adapted from Figure 3.4.2-2).
4.) Figure 4: Locations of point source airborne emissions from all buildings associated with the proposed action (there is not a comparable figure currently in the ER).
5.) Figure 5: Locations of tenant organizations (e.g., the Ohio National Guard and the OVEC office building) on the DOE Reservation (there is not a comparable figure currently in the ER).
6.) Figure 6: Boundaries of the environmental restoration quadrants together with the location of Phase I and Phase II Cultural Resource Surveys completed on the reservation (adapted from Figure 3.4.1-1).
7.) Figure 7: Location of environmentally sensitive areas on the reservation, with separate hatchings or symbols used to denote wetlands, floodplains, and sensitive or unique habitats (but not a specific symbol for rare, threatened, or endangered species habitat, which cannot be disclosed in a public document) (adapted from Figures 3.5.4-1 and 4.5.3-1).

- The maps and figures withheld pursuant to 10 CFR 2.390 contain information critical to communicating the proposed action and potential impacts in the DEIS. To the extent possible, sensitive information should be removed and/or the maps and figures should be simplified so that the basic information relevant to the DEIS can be presented, in accordance with the requirement in 10 CFR 51.70(b) that the DEIS contain appropriate graphics.

**1-2 Permits, Licenses, and Approvals:**

A. Provide an update on the status of the following permits and discussions listed in Table 1.3-1 of the ER, especially as they apply to the construction of cylinder storage yard X-745H and other new cylinder storage yards.

1.) Clean Water Act Section 404 (Dredge and Fill) Permit and related discussions with the U.S. Army Corps of Engineers, as noted on page 1-19 of the ER.

2.) Ohio General Permit for Filling Category 1 and Category 2 Isolated Wetlands and related discussions with the Ohio Environmental Protection Agency (OEPA), as noted on page 1-19 of the ER.

3.) Ohio Individual Isolated Wetland Permit and related discussions with the OEPA, as noted on page 1-20 of the ER.

- Table 1.3-1 states that USEC believes that construction of the ACP would not result in dredging or placement of fill material into wetlands, but notes that such activities may be required. The DEIS should present updated and more definitive information about those activities and the status of related permits and discussions.

B. Provide a copy of the existing Spill Prevention Control and Countermeasures (SPCC) Plan referenced on page 1-20 in Table 1.3-1 of the ER. Also provide any revisions made to that plan to include ACP operations, if available. If such revisions are not yet available, provide information on the anticipated content of the revisions to include the ACP.

- While Chapter 5 of the ER describes several steps that will be taken to prevent, contain, and respond to spills, more specific details from the SPCC Plan and how it would address the ACP would improve the description of control measures to be included in the DEIS.

**1-3 Informal Consultations:**

A. Provide a copy of the March 2, 2004 consultation letter to the State Historic Preservation Officer (SHPO).

- According to the letters included in Appendix B of the ER, USEC responded to a January 28, 2004 letter from the SHPO requesting additional information with another letter to the SHPO dated March 2, 2004. However, that March 2, 2004 letter is not included in Appendix B.

## SECTION 2 – ALTERNATIVES

Pursuant to 10 CFR 51.45(b), the ER is required to contain a description of the proposed action and 10 CFR 51.45(b)(3) requires that the ER discuss the alternatives to the proposed action. The discussion of each alternative, including the proposed action, should be sufficiently complete to assist the NRC staff in developing and exploring appropriate alternatives.

### 2-1 Manufacturing Activities:

A. Provide a complete description of the centrifuge manufacturing activities that would occur as part of the proposed action, as referenced on page 2-4 and elsewhere in the ER. This description should include the location(s) of the proposed manufacturing facility(ies), any new construction activities (including new construction footprints), the proposed manufacturing operations (including the quantities and contaminant concentrations of planned air emissions and liquid effluents), the potentially affected environment at the proposed manufacturing site(s), the impact on the environment, and any related mitigation measures and environmental measurement and monitoring programs.

- Several places in the ER mention the large number of centrifuges that will have to be manufactured and provide general information on the potential impacts to some resource areas (e.g., non-radiological air quality on page 4-74 in Section 4.6.3.1), assuming such manufacturing could occur onsite at Piketon or at some other site. However, this information is not sufficiently complete or detailed to allow full coverage of this issue in the DEIS. Information is particularly lacking for any centrifuge manufacturing activities proposed off the DOE Reservation, which the ER says may be included within the proposed action.

B. Clarify whether all the machine components listed in Table 4.2.3.1-6 on page 4-26 of the ER would be manufactured and tested at the same site(s) addressed in response to the preceding question or at different sites. If different sites, provide the same information requested in the preceding question for each affected site.

- The ER mentions a variety of unique manufacturing and testing activities that would not be expected to occur if it were not for the proposed action. However, the ER does not make it clear if all of these activities would occur at the same site and does not present sufficient detail to allow these activities to be credibly addressed in the DEIS.

### 2-2 Cylinder Storage Yards:

A. Specify which cylinder storage yards already exist and which will be constructed.

- Table 2.1.2.1-1 (page 2-6) of the ER lists only X-745G-2 as an existing cylinder storage yard, while the License Application (page 1-9) states that X-7746N, X-7746S, X-7746E, X-7746W, X-7756S, and X-745G-2 are all existing cylinder storage yards.

B. Clarify the description of cylinder storage yard square footage.

- Table 2.1.2.1-2 (page 2-6) of the ER estimates 1,451,220 square feet of storage yards for a facility with a production rate of 3.5 million SWU/year and only an additional 19,658 square feet of storage yards if the plant were to have a production rate of 7 million SWU/year.

**2-3 Sewage Treatment Plant:**

Clarify whether building X-6619 is considered a primary or secondary facility. Provide a detailed description of building X-6619, including design, capacity, treatment methods, outfall locations, discharge limits, and volumes of treated wastewater discharged.

- These facilities are briefly noted in the License Application (pages 1-10 through 1-13), but it is unclear whether the wastewater treatment system is designed to handle the type, volume, and concentration of wastes to be generated under the proposed action.

**2-4 Interplant Transfer Corridor:**

Describe the specific modifications to be made to the X-7727H Interplant Transfer Corridor during construction of the ACP, including earthmoving activities, that could result in environmental impacts.

- Table 4.3.3-1 on page 4-43 of the ER lists site preparation activity for the X-7727H Interplant Transfer Corridor. However, Table 2.1.2.1-2 on page 2-6 of the ER does not list X-7727H as a facility to be constructed.

**2-5 Other Support Facilities:**

A. Provide the size, location, and primary function of the existing X-112 Data Processing Building, X-1020 Emergency Operation Center, X-6002 Boiler System, and X-6002A Oil Storage Facility. Also, provide the size of the proposed X-2215A Power Ductbank System, X-2220D Communications Ductbank System, and any other support facilities not described in detail.

- These facilities are briefly noted in the License Application (pages 1-10 through 1-13), but no details are provided. This information is necessary to provide a complete and consistent description of the facilities to be used under the proposed action.

B. Clarify an inconsistency in the square footage totals for support facilities.

- Page 4-41 of the ER states that the 7 million SWU facility would require construction of 3,717,262 $ft^2$ of support facilities plus a number of cylinder yards. Page 4-71 then says the 7 million SWU facility would require the construction of withdrawal and support buildings, plus several cylinder yards, spanning approximately 3,555,633 $ft^2$. Neither of these numbers is reproducible with the square footage of facilities to be constructed listed in Table 2.1.2.1-2 on page 2-6 of the ER.

**2-6 Process Piping:**

Provide details on the location of the proposed 5,000 feet of additional process piping and its primary function.

- The License Application on page 1-9 states that there is 2, 500 ft of existing process piping. The ER on page 2-6 states that 5,000 additional feet of piping will be constructed, but no details about its construction are provided.

**2-7 Heat Plant:**

Describe the process of relocating the X-6002 Heat Plant from the X-3002 building to an area adjacent to X-6002A (part of the refurbishment activities described on page 2-7 of the ER). If construction is involved, indicate how much land will be disturbed and the methods employed to limit erosion and surface water sedimentation and contamination.

- Page 2-7 of the ER lists the relocation of the X-6002 Heat Plant as a refurbishment activity, but does not provide any details on the scope of this activity.

**2-8 Feed and Customer Services Building:**

A. Clarify whether heated cylinders in the feed area would be raised by crane up and over other heated cylinders when the cylinders are moved between rows of feed ovens.

- Page 1-5 of the License Application indicates that a bridge crane transports $UF_6$ cylinders between rows of ovens, but it is unclear from this description whether there is a safety protocol to avoid raising one heated cylinder over another.

B. Verify that liquid $UF_6$ cylinders in the customer services area will not be moved and will not be in an area where they may be hit by heavy equipment moving in their vicinity.

- Page 1-5 of the License Application is unclear with respect to any planned movements of liquid $UF_6$ cylinders or movements of heavy equipment that may collide with such cylinders

**2-9 Utilities and Other Services:**

Provide additional detail on suppliers of utilities and services and how these services are to be provided for the proposed action through existing buildings and services. (See related question 4-8F.)

- As stated in the License Application (Section 1.1, page 1-10), utilities to be procured by the ACP include high voltage electrical power, firewater, sanitary water, sanitary sewer, communications, and non-potable cooling water. Support

services procured by the ACP would include emergency response, training, maintenance, environmental management, and administrative support. It is unclear how these utilities and services for the ACP can be provided through existing buildings and services.

## SECTION 3 – DESCRIPTION OF THE AFFECTED ENVIRONMENT

Pursuant to 10 CFR 51.45(b), the ER is required to contain a description of the affected environment.

### 3-1 Geology and Soils:

With respect to page 3-13 in Section 3.3.2 of the ER, provide information on existing chemical or radiological contamination of soils and groundwater observed in wells STSW-103G, F-23G, and X-749-58g.

- The text provides a summary of data from 15 DOE and 26 USEC sampling locations throughout the Portsmouth site (Table 3.3.2-1), but does not provide chemical or radiological data specific to the proposed construction areas. The referenced document (DOE 2003a, US Department of Energy, Portsmouth Annual Environmental Report for 2002, DOE/OR/11-132 and D1, October 2003) shows three wells in close proximity to the proposed ACP site. Data from locations closer to the proposed construction areas may be more representative of the site conditions.

### 3-2 Ecological Resources:

Provide a description of the site-specific terrestrial resources and wildlife within and adjacent to new cylinder storage yard X-745H.

- Sections 3.5.1 and 3.5.2 on pages 3-36 and 3-37 of the ER describe the area around the centrifuge facility within the perimeter road and do not present a description specific to the proposed location of cylinder storage yard X-745H.

### 3-3 External Gamma Radiation Monitoring:

With respect to Section 3.5.5.2 starting on page 3-39 of the ER, provide the last five years of results of the external gamma radiation monitoring program described on pages 4-79 and 6-4 of the ER, along with a map showing the location of monitoring stations.

- Section 3.5.5.2 of the ER provides site-specific information on the concentrations of radioactivity and radionuclides in air, surface water, soil, plant, and sediment samples collected in 2001 and 2002. However, the ER provides no results for ambient radiation levels, even though pages 4-79 and 6-4 describe monitoring of external gamma radiation using thermoluminescent dosimeters positioned at various onsite and offsite locations.

**3-4 Meteorology, Climatology, and Air Quality:**

A. Provide the site-specific population and joint frequency data files used to generate the National Emission Standards for Hazardous Air Pollutants (NESHAPs) compliance analysis using CAP88, as described in Section 3.6.3.2 starting on page 3-55 of the ER.

- The site-specific population and joint frequency data files are not presented along with the summary of input parameters presented on page 3-56 of the ER, but are needed for the public and occupational health analysis to be included in the DEIS.

B. Also with respect to the NESHAPs compliance analysis described in Section 3.6.3.2 starting on page 3-55 of the ER, provide the distances used for the manual grid input when running CAP88 for NESHAPs compliance cases using individual assessments rather than population assessments. Alternatively, provide the CAP88 input files for individual assessments.

- Similar to the preceding question, the grid input information is not presented along with the summary of input parameters presented on page 3-56 of the ER, but is needed for the public and occupational health analysis to be included in the DEIS.

**3-5 Historic and Cultural Resources:**

A. With respect to page 3-63 in Section 3.8.2 of the ER, clarify which existing buildings are contributing resources to the historic property.

- The description presented on page 3-63 indicates that some buildings are contributing and that some buildings are not contributing resources to the historic setting, but does not provide any additional detail necessary to assess the impacts on the buildings that contribute to the historic setting.

B. Provide a copy of the following material cited on pages 3-62 and 3-63 in Sections 3.8.1 and 3.8.2 of the ER:

1.) DOE 2001b – The Environmental Assessment Reindustrialization Program at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio.
2.) Dobson-Brown et al 1996 – Dobson-Brown, D., Church, F., and Schweikart, J., Management Summary for the PORTS Cultural Resource Literature Review, Predictive Model, and Preliminary Reconnaissance Survey in Scioto and Seal Townships, Pike County Ohio.
3.) Schweikart et al 1997 – Schweikart, J.F., Coleman, K., and Charles F., Phase I Archaeological Survey for the Portsmouth Gaseous Diffusion Plant (PORTS Facility) in Scioto and Seal Townships, Pike County, Ohio.
4.) Coleman et al 1997 – Coleman, K., Dobson-Brown., and Herr, D. Phase I Architectural Survey for the Portsmouth Gaseous Diffusion Plant (PORTS Facility) in Scioto and Seal Townships, Pike County, Ohio.

- While selected details from each of these references are cited in the ER, complete copies of each report are needed to complete the environmental review and DEIS.

**3-6 Socioeconomics:**

A. With respect to page 3-74 in Section 3.10 of the ER, provide additional detail on the institutional, transient, and seasonal populations in the region of influence (ROI) and whether these populations are likely to be affected by the proposed action.

- The referenced section of the ER states, "In addition to the residential population, there are institutional, transient, and seasonal populations in the area." However, no further detail is provided.

B. With respect to page 3-74 of Section 3.10 of the ER, clarify whether Pike Community Hospital, the closest hospital to the DOE Reservation, will provide healthcare services to workers at the proposed ACP.

- The referenced section of the ER identifies hospitals in proximity to the DOE Reservation. It is not clear, however, whether the proposed ACP will have healthcare facilities onsite.

**3-7 Traffic:**

A. Provide information on the likely schedules of the new employees who will work in the proposed facility. What percentage of the new workers will likely have a day shift and what would a typical day shift be? Are there likely to be staggered schedules? If there are other shifts, what are they likely to be? What percentage of the new work force will work on the other shifts?

- Section 3.2 notes that peak traffic flows occur during shift changes. In order to assess how the project will affect the roadway level of service, it is important to assess what traffic volumes will be generated during peak periods.

B. Will all the employees be required to exit the facility through the access road to Route 23? What other routes are there and what percent of the employees may be expected to use other routes?

- The number of routes utilized by commuting employees will affect the magnitude of peak volumes on the local road system.

**SECTION 4 – ENVIRONMENTAL IMPACTS**

Pursuant to 10 CFR 51.45c), the ER is required to include an analysis that considers and balances the environmental effects of the proposed action, the environmental impacts of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse environmental effects.

**4-1 Transportation Impacts:**

A. Analyze and provide a complete summary of all the radiological and environmental impacts of transportation accidents for the proposed action based on NUREG-0170 and the specific volumes and origins and destinations described in Section 4.2.3.2.1 of the ER. Also provide the TRAGIS node names and node numbers used in the analysis.

- Page 4-29 of the ER states that as long as nuclear materials are shipped in conformance with NRC and Department of Transportation regulations and in containers that meet those agency's requirements, then the radiological and environmental impacts of accidents do not need to be evaluated as these were addressed in NUREG-0170. The relevant information and analyses from NUREG-0170 and other appropriate documents need to be brought forward, combined with the project specific shipment information, and the resulting analysis presented so that the reader can see what the radiological and non-radiological accident impacts are.

B. Describe in detail and clarify the scaling process that was used to apply the results from ANL/EAD/TM-112 to the proposed ACP shipments to a range of destinations, as mentioned on page 4-34 of the ER.

- Page 4-34 of the ER simply states that this was done, but provides no details. As such, it is not possible to determine if the assumptions made are reasonable and appropriate.

C. Provide a summary of the analysis based on ANL/EAD/TM-112 and justify how shipments from East Tennessee can be leveraged for use nationwide.

- On page 4-5, the ER states that ANL/EAD/TM-112 bounds the shipment of $DUF_6$ and non-$DUF_6$ cylinders. ANL/EAD/TM-112 states that its analyses can be incorporated in future EISs, but this has not been explicitly done in the ER. Given this statement in the original document, one would expect to see the ER take advantage of the past analyses by presenting parts of the past analyses and combining them with the project-specific information on numbers of trips, distances, routes, etc. to present a simplified analysis applicable to the present proposal.

D. Clarify and summarize all methodologies applied and inputs used to assess transportation impacts.

- Throughout Section 4.2 of the ER, reference is made to methodologies from other documents, but information is not presented in a sufficiently detailed or consistent way to allow a reviewer to understand and accept the ER's conclusions. For example:
  1.) The basic accident rates and emission factors are listed in some instances, but not all;
  2.) Route information is not provided;

3.) Pages 4-5 to 4-6, section 4.2.3.1, describe the sources of various inputs, but does not include any discussion on the suitability of the values selected;
4.) Page 4-34, section 4.2.3.2.1.7, refers to DOE 2001, the 2000 census, and TRAGIS model runs, but no data are provided; and
5.) Page 4-36 refers to ANL/EAD/TM-112 and the scaling of its results, but the scaling assumptions are not provided.

E. Provide all of the basic information for the equipment and material tables in Section 4.2 in a consistent format, using the table below as a guideline for the minimum parameters that are needed. Include all waste shipments, including shipments of used centrifuges, in this table.

| **Item or material** | **Number of truckloads per year** (if they vary by year, give appropriate estimates for each year) | **Years in which trips are made** (during construction, during operations, etc.) | **Distance in miles** (Give basis for distance selected, e.g., from TRAGIS, distance to selected source, distance to likely source) | **Is mileage one-way or two-way?** (describe basis for selection) | **Weight per shipment or type of truck that will be used** (Feeds into air analyses, and for hazardous materials, the design of the trucks influences the chance of a release) | **Route information and source** (this might be origin and destination; TRAGIS run; local or typical sourcing locations; etc. |
|---|---|---|---|---|---|---|
| | | | | | | |

- The tables in Section 4.2 vary in detail and the presence of specific information. Some provide miles, some provide number of shipments, and others list points of origin. Missing data can sometimes be determined from the list of assumptions, but not always. For the electrical equipment, feed and withdrawal equipment, and the machine plant, mileages are not provided. In addition, the basis for one-way versus two-way trips is not clear and waste transportation is not fully characterized. For example, used centrifuges are not discussed as a waste stream in the ER.

F. Provide the same information on hazardous materials (e.g., hydrofluoric acid) shipments, using a table similar to that provided above.

- The risks and environmental impacts of transporting non-radiological hazardous materials are not analyzed in the ER.

**4-2 Geology, Soils, and Seismicity Impacts:**

With respect to Site Preparation activities listed in Table 4.3.3-1 in Section 4.3.3 of the ER, provide soil quality data (along with a map showing corresponding sampling locations) for each of the areas to demonstrate that materials to be excavated and transported during the construction phase of the proposed action pose no unacceptable

risk to workers or the environment. If no soil quality data are available, or data indicate potential contamination, provide a description of how soil will be managed to minimize release.

- Excavated soils have the potential to release contaminants during excavation and transport. The maps and data do not show the locations where soil will be disturbed as a result of construction activities, or the associated soil quality. Such maps and data are necessary, however, to determine if impacts from soil excavation are likely to occur.

**4-3 Water Resources Impacts:**

A. With respect to Table 4.4.3-2 on page 4-54 of the ER, confirm that the projected withdrawal rate for water supply wells at the 7 million SWU operating capacity is within permitted levels and provide a map that shows the location of domestic, residential, or irrigation supply wells that tap the Scioto River aquifer.

- While the referenced table shows that projected ACP potable and makeup water use is expected to increase current water consumption by 3.2 percent, it is unclear if any additional groundwater withdrawals needed for this additional consumption could impact other supplies in the area. A map showing the locations of wells in the Scioto River aquifer and comparison of projected withdrawals to currently permitted levels would allow the DEIS to address this question.

B. With respect to Section 4.4.3 starting on page 4-59 of the ER, provide:
   1.) Existing permit conditions for the NPDES outfalls potentially impacted by the proposed action.
   2.) Results of non-radiological and radiological analyses of samples taken from those NPDES outfalls during current plant activities, distinguishing to the extent possible what is due to DOE versus United States Enrichment Corporation discharges.
   3.) Estimated concentrations of non-radiological and radiological contaminants at the NPDES outfalls under the proposed action.

- This information is presently not provided in the ER, but is needed for the DEIS to assess how liquid effluent quality is expected to change under the proposed action and compare to existing permitted levels.

C. With respect to the West and Southwest Drainage Ditches described on page 4-52 of the ER, clarify whether water in those ditches is used (e.g., for agricultural, drinking, commercial/industrial, or recreational purposes) between the points where they receive effluent from the DOE site and the points where they discharge into the Scioto River.

- Although pages 3-20 and 3-21 in Section 3.4.2 of the ER state that water in these ditches is considered suitable for a variety of uses, no information is provided on whether these ditches are actually used in any way prior to discharging into the Scioto River.

D. Provide information and analysis regarding the potential for the TCE plume associated with X-749/X-120/Peter Kiewit Landfill to generate unacceptable volatile organic vapors during construction or operation.

- Vapors from TCE in groundwater migrate through soil and are a potential source of airborne contamination. In Section 4.4.3, within subsections on Construction and Operations on page 4-53, there is no discussion of the potential impacts of contaminated groundwater.

**4-4 Ecological Resources Impacts:**

A. Provide a site-specific description of the ecological effects associated with construction and operation of the cylinder storage yard X-745H.

- Page 4-62 in Section 4.5.3 of the ER provides a general description of the ecological effects of the proposed action, but does not provide site-specific impacts for the development of cylinder storage yard X-745H.

B. In Section 4.5.3 (page 4-62) and Section 5 (pages 5-1 and 5-2), elaborate on any mitigation measures that would be implemented in addition to required best management practices (BMPs) for mitigating impacts to ecological resources. Such mitigation measures may include: flexible construction schedules to avoid sensitive wildlife breeding or rearing periods, revegetating temporarily disturbed areas with native vegetation, enhancing bat habitat by installing bat houses, and using natural material for slope stabilization instead of engineered materials (concrete retaining walls).

- Currently, Section 4.5.3 and Section 5 do not provide a description of potential mitigation measures, other than the implementation of BMPs (e.g., silt fences), to mitigate impacts.

**4-5 Air Quality Impacts:**

A. Specify the units used to report the typical emission rates in Table 4.6.3.2-1 on page 4-77 of the ER and review the data to ensure that the sum of the rows and columns is equal, within round-off errors, to the totals reported in the table.

- No units are provided for the numbers given in Table 4.6.3.2-1. Additionally, the sum of the $^{234}U$ emission rates is $7.04 \times 10^{-2}$, significantly less than the $1.27 \times 10^{-1}$ reported in the table.

B. With respect to page 4-78 within Section 4.6.3.2 (Radiological Air Quality) of the ER, provide one or more maps showing the location of:
   1.) All airborne sources of radiological emissions associated with the ACP.
   2.) All cylinder storage yards associated with the ACP (along with the type and quantity of material to be stored in each yard, both short- and long-term).

3.) Primary onsite roads for transporting radiological materials into and out of the ACP.
4.) All onsite tenants (along with the approximate number of people working in each building or area).
5.) All buildings or areas where there are onsite non-radiological (i.e., non-badged) workers (along with the approximate number of people working in each building or area).
6.) The current actual offsite residences nearest to the DOE Reservation boundary in each compass direction.

- These locations and other details are not provided in the ER, but are needed for the dose modeling to be included in the DEIS. The requested map(s) would be for internal use in preparing the DEIS, and would not need to provided in a form suitable for publication in the DEIS (i.e., do not need to be purged of proprietary or secure information).

C. Provide the total square footage of land to be excavated for the new roads and new parking areas listed in Table 4.3.3-1 on page 4-43.

- Although the ER provides the square footage of new building footprints, the area to be excavated for new roads and parking areas is not provided. This additional area is needed to evaluate the air quality impacts of the proposed new construction.

D. With respect to the manufacturing discussion on page 4-74 in Section 4.6.3.1 (Non-Radiological Air Quality), provide estimates of the quantities and concentrations of non-radiological contaminants expected to be emitted to the air from the proposed centrifuge manufacturing operations.

- Page 4-74 and Appendix E of the ER identify chemicals that may be used in the manufacturing operations and emitted to the air, but there is not sufficient information to support an analysis of potential air quality and public health impacts.

E. With respect to the operations discussion on page 4-75 in Section 4.6.3.1 (Non-Radiological Air Quality), provide information on how many diesel generators may be used in a given year for the proposed action at the 7 million SWU operating level.

- While page 4-75 states that the diesel generators are expected to operate below the Ohio permitting threshold, the total number of generators that may be on hand and used in a given year is needed to support modeling of potential air quality impacts for the DEIS.

F. With respect to the operations discussion on page 4-75 in Section 4.6.3.1 (Non-Radiological Air Quality), provide the number of tons of coal that would be used annually under the proposed action at the 7 million SWU operating level.

- While Section 4.6.1 on page 4-67 reports that 60,000 tons of coal would be used annually under the no-action alternative, no information is provided on how coal consumption would increase under the proposed action.

G. For the aboveground storage tanks (ASTs) listed in Table 4.4.3-3 on page 4-55, provide information on whether the tanks are going to be vertical or horizontal fixed roof tanks or floating roof tanks.

- These details are not provided in the ER, but are needed to support the analysis of potential non-radiological air quality impacts associated with the ASTs.

H. With respect to the discussion of the Product and Tails Withdrawal Building Operations, provide the expected concentration of hydrogen fluoride (HF) in the workspace atmosphere from cylinder connections and disconnections.

- The formation of $UO_2F_2$ mentioned on page 4-83 should be accompanied by the formation of HF. The expected HF concentrations are not provided in the ER, but are needed to support the analysis of potential non-radiological air quality impacts associated with these operations.

**4-6 Noise Impacts:**

With respect to the noise impact analysis on page 4-86 in Section 4.7.3 of the ER, clarify whether the proposed ACP construction will occur only during normal working hours in the day or may also occur at night. If construction activities may occur at night, provide estimated noise levels at the closest DOE Reservation boundary during night-time construction activities.

- The analysis on pages 3-59 and 4-86 addressing noise levels for familiar sources other than the proposed ACP will be sufficient if construction occurs only during the day. If construction may actually occur at night, estimates of construction noise levels would help address the potential impact.

**4-7 Historic and Cultural Resources Impacts:**

Elaborate on how the new facilities would be constructed to be consistent with nationally recognized standards and how such activities would not alter the property's significant historic settings.

- Section 4.8.3, page 4-88, does not provide a description of how new buildings would be constructed to support the statement that they would not alter the property's significant historic setting.

**4-8 Socioeconomic Impacts:**

A. Provide documentation of the input-output (RIMS-II) modeling assumptions, calculations, and multipliers referenced on page 4-92 of the ER.

- Socioeconomic impacts were estimated using RIMS-II multipliers developed by the Bureau of Economic Analysis (BEA). Section 4.10.1 describes the socioeconomic impact methodology used. However, documentation clarifying assumptions, calculations, and multipliers were not provided.

B. With respect to page 4-96 of the ER, provide the estimated number of jobs created during each of the following unique phases of the proposed action. Provide details on whether these positions are full- or part-time, as well as the timeline in which the jobs will be active.
   1.) Refurbishment, site preparation, and construction
   2.) Manufacture of gas centrifuges and components
   3.) Facility operation
   4.) Decontamination and decommissioning

- Section 4.10.1.3 of the ER describes the employment impact of two phases: (1) Refurbishment and Construction, and (2) Operations. However, the DEIS will examine potential impacts for the four phases above.

C. If there are any updates to the estimated number of jobs in response to 4-8B above, provide revised estimates of the secondary employment impact of the proposed action that reflect any changes in total direct employment based on all four project phases listed in 4-8B.

- Page 4-96 in Section 4.10.1.3 of the ER describes the number of direct jobs created during the construction and operation phases of the proposed action. If the estimated number of jobs is revised in response to 4-8B, corresponding revised estimates of secondary employment impact are needed for each project phase.

D. With respect to page 4-96, provide a reference for the cited percentage of new jobs that would be filled from outside the ROI for each unique phase (as listed in 4-8B) of the proposed action.

- Section 4.10.1.3 describes the anticipated increase in construction contractor jobs during both the refurbishment and construction phases of the proposed action. It states that one quarter of the 1,036 new jobs would be filled from outside the ROI. However, no reference or rationale for that estimate is provided.

E. Provide details about the capacity of the Pike Sanitation Landfill and which communities/municipalities depend on it for waste disposal. Provide details on alternative landfills in the area available for use by ROI communities.

- Section 4.2.3.2.3.1 (page 4-38) of the ER lists the Pike Sanitation Landfill as a destination for solid waste generated by the proposed action and specifies the projected tonnage to disposed at the landfill. Information on the overall capacity of the landfill is needed to estimate whether use of the landfill by the proposed action will affect community waste disposal resources.

F. If utilities (electric power, natural gas, sanitary water, wastewater treatment, municipal waste disposal) will be procured from off-site providers for any phase of the proposed action, provide details on how the increased demand (if any) from the proposed action will affect the availability and cost of utilities to communities in the ROI.

- Section 8.2 (page 8-1) of the ER states that "Impacts to utility usage for the ACP were analyzed for electricity, water, and sewer. Based on existing excess capacities and the increase in utilization, the impact to the utility usage would increase, but would be well within design and historical capacities for the various utilities." The ER does not clarify whether these utilities include off-site utilities. The ER also provides no assessment of the impact of off-site utility procurement (if any) to the availability and cost of utilities to communities in the ROI.

**4-10 Waste Management Impacts:**

A. Provide information on the types and quantities of LLRW and RCRA wastes that are expected to be generated from cleanup and refurbishment activities needed prior to turning over existing facilities from DOE to USEC to begin ACP uprgrade activities. This should include information on any wastes from DOE's accelerated cleanup of the Gas Centrifuge Enrichment Plant (GCEP) facilities to be used by USEC for the ACP.

- Page 4-115 in Section 4.13.3.1 of the ER notes that LLRW and RCRA wastes could be generated during the refurbishment phase, but Table 4.13.3.3-1 on page 4-125 and Table 4.2.3.2-2 on page 4-33 do not appear to account for such wastes.

B. Clarify if wastes from centrifuge failures, lubricants, and other vacuum system components and wastes from start-up testing activities are included in Table 4.2.3.2-2 on page 4-33 and Table 4.13.3.3-1 on page 4-125. If so, explain where these wastes are accounted for in the tables. If not, revise the tables to account for these wastes.

- Given the categories of wastes defined in the above-referenced tables, it is unclear if wastes from centrifuge failures, lubricants, and other vacuum system components and wastes from start-up testing activities are included.

C. Specify the practices for the onsite management of LLRW and LLMW associated with the proposed action, including the location and design of onsite management facilities and the length of time the waste will be stored onsite prior to shipment offsite.

- While page 4-120 of the ER states that these wastes will be managed onsite in accordance with applicable requirements, this description does not provide enough detail to allow the DEIS to describe and assess the radiation doses associated with these onsite waste management activities.

D. Provide information on the quantity, form, and isotopic content of all LLRW and LLMW – other than depleted uranium wastes – to be managed onsite at Piketon as result of the proposed action.

- The general information on mixed and radioactive waste provided on page 4-119 of the ER is not specific enough to support dose modeling. In order to model dose by isotope, data on expected activities for each isotope are needed, not ug/g of total uranium. In addition, the information on page 4-119 provides a wide range of concentrations and indicates that even higher concentrations do occasionally occur. Given this very uncertain information, it is not clear what to assume for dose modeling.

E. Clarify what the "non-regulated" waste streams are in Table 4.2.3.2-2 on page 4-33 and Table 4.13.3.3-1 on page 4-125.

- It is unclear what "non-regulated classified" wastes and "non-regulated general maintenance and maintenance materials" are in relation to the other types of wastes listed in both tables.

**SECTION 7 – COST BENEFIT ANALYSIS**

Pursuant to 10 CFR 51.45c), the ER is required to consider the economic, technical, and other benefits and costs of the proposed action and alternatives.

A. Provide estimates of the average operating and maintenance costs per SWU for the following alternatives. Also indicate the source of these estimates.
   1.) No-action alternative (continued operation of the Paducah Gaseous Diffusion Plant (PGDP)), and
   2.) ACP located at Piketon (7 million SWU capacity).

- Appendix C of the ER provides estimates of construction costs of the ACP located at Piketon (as well as the alternative location at Paducah). However, it does not include estimates of operation and maintenance costs for the proposed action or the no-action alternative.

B. Provide references for studies/literature that discuss the comparative operating costs and/or relative resource consumption (coal/oil, water) of the gaseous diffusion and gas centrifuge technologies for uranium enrichment.

- Section 1.1 (page 1-10) of the ER states that gas centrifuge technology for uranium enrichment has lower operating costs than gaseous diffusion technology. It also states that energy costs for gas centrifuge technology are 5 percent of that for a comparably sized gaseous diffusion plant. However, no references are provided for these statements.

C. Provide cost estimates and timeframes for the decommissioning of the:
   1.) No-action alternative (continued operation of PGDP), and
   2.) ACP located at Piketon (7 million SWU capacity).

- Section 10.10 of the License Application provides an estimate of the decommissioning cost of the proposed action at the 3.5 million SWU capacity, but not the 7 million SWU capacity. Also, no estimate is given for the cost to decommission the PGDP.

D. Clarify whether the Portsmouth Gaseous Diffusion Plant would be decommissioned under either the no-action alternative or the proposed action. If yes, provide cost estimates and timeframes for its decommissioning.

- Neither the ER nor the License Application provide estimates of decommissioning costs for the Portsmouth Gaseous Diffusion Plant.

E. Provide details of the comparative waste generation rates from operation-phase activities for the no-action alternative (continued operation of PGDP) and the ACP located at Piketon.

- Table 4.13.3.3.3-1 on page 4-125 of the ER lists projections of major waste types for the proposed action. Section 3.12, however, does not provide comparable detail for the no-action alternative. This information is necessary to facilitate a comparison of waste management costs. (Page 4-121 of the ER does indicate that $DUF_6$ tails from both types of facilities are expected to be equal for the same level of production.)