FINDING OF NO SIGNIFICANT IMPACT
WASTE DISPOSITION ACTIVITIES AT THE
PADUCAH SITE
PADUCAH, KENTUCKY

AGENCY: U.S. DEPARTMENT OF ENERGY

ACTION: FINDING OF NO SIGNIFICANT IMPACT

SUMMARY: The U.S. Department of Energy (DOE) has completed an environmental assessment addendum (DOE/EA-1339-A), which is incorporated herein by reference, for proposed disposition of 17,600 m^3 of waste from the Paducah Site in Paducah, Kentucky. It is anticipated that most of the waste would be transported for disposal at various locations in the United States. Based on the results of the impact analysis reported in the EA, DOE has determined that the proposed action is not a major federal action that would significantly affect the quality of the human environment within the context of the National Environmental Policy Act of 1969 (NEPA). Therefore, preparation of an environmental impact statement is not necessary, and DOE is issuing this Finding of No Significant Impact (FONSI).

PUBLIC AVAILABILITY OF EA AND FONSI: The EA and FONSI may be reviewed at and copies of the document obtained from:

Gary Bodenstein, NEPA Document Manager
U.S. Department of Energy
5600 Hobbs Road
West Paducah, KY 42001
(270) 441-6831

Paducah Public Library
555 Washington Street
Paducah, KY 42001

FURTHER INFORMATION ON THE NEPA PROCESS: For further information on the NEPA process, contact

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BACKGROUND: DOE completed the *Environmental Assessment for Waste Disposition Activities at the Paducah Site, Paducah Kentucky* DOE/EA-1339 and issued a Finding of No Significant Impact on November 5, 2002. Since that time, DOE has identified an additional 17,600 m^3 of material currently stored at the Paducah Site that should be dispositioned. DOE must continue to manage and control its material and wastes safely, efficiently, and cost effectively in compliance with applicable federal and state laws while protecting public health and the environment. The wastes considered in the assessment are limited to DOE's ongoing and legacy non-CERCLA waste management operations at the Paducah Site. This additional material is primarily stored in DOE Material Storage Area (DMSAs). Material not covered in this EA are those associated with the Comprehensive Environmental Response, Compensation,

and Liability Act of 1980 (CERCLA) activities, including decontamination and decommissioning activities, and disposition of wastes associated with USEC operational activities. The cumulative impacts section of the EA does take these wastes into consideration. The assessment is intended to supplement and update the previous *Environmental Assessment for Waste Disposition Activities at the Paducah Site, Paducah, Kentucky* (DOE/EA-1339) completed November 2002. This assessment expands the scope of previous analyses to include the additional material.

The material will be characterized before it is dispositioned. DOE anticipates most of the material is non-hazardous waste but a portion of the material may contain residual radionuclide contamination at high enough concentrations to be classified as low-level waste. Low-level waste would be disposed off-site at the DOE Nevada Test Site, the DOE Hanford Site, or a commercial facility.

If the characterization shows the residual radioactivity is low enough to meet the waste acceptance criteria, then it may be disposed in the on-site landfill. On-site disposal of waste, which may include residual radioactive material, is evaluated in the *Environmental Assessment for the Construction, Operation, and Closure of the Solid Waste Landfill at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE/EA-1046) and *The Environmental Assessment on the Implementation of the Authorized Limits Process for Waste Acceptance at the C-746-U Landfill Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE/EA-1414) and is not further evaluated in this EA Addendum.

The impact analysis in the EA Addendum addressed the potential effects of storing, packaging, and transporting the additional material that is waste from Paducah to destinations representative of other DOE sites and licensed commercial treatment/disposal facilities. The potential effects of transport over both highway and rail routes were evaluated.

ALTERNATIVES: In addition to the proposed action, impacts were also evaluated for two alternatives 1) no action alternative and 2) enhanced storage.

1) *No Action Alternative* - In the No Action alternative (i.e., long-term storage), DOE would not perform disposition activities for the additional material, except for those needed for waste management and maintenance. The material would be stored until the facilities enter the Decontamination and & Decommissioning Program.

2) *Enhanced Storage Alternative* – The Enhanced Storage alternative is identical to the No Action alternative with the exception that storage facilities for the additional material would be constructed for resistance to disasters (such as earthquakes and fires). No disposal of the existing additional waste would occur. Because existing storage space does not meet enhanced storage definitions, new facilities would have to be constructed on-site to store material.

PROPOSED ACTION

1) Land Use

Removal of the additional material could result in modification of the existing lease to the United States Enrichment Corporation to include some of the emptied areas.

2) Socioeconomics and Environmental Justice

The proposed action employment increase of less than a 3% change from 1997 employment in McCracken County does not represent a notable impact. Minority and Low-Income Populations would not be disproportionately exposed to transportation impacts. These groups would be subject to the same negligible impacts as the general population.

3) Transportation Impacts

a) Air Quality

Air emissions from transport through non-attainment areas along shipment routes are well below the Environmental Protection Agency threshold emission levels. Therefore no formal conformity analysis is required.

b) Risk Associated with Truck Transport

Radiological Impacts from normal Truck Transportation - The potential effects of transporting waste by highway from Paducah to each of the potential final destination sites were evaluated. Truck shipments to receiving facilities were evaluated for the probability of a latent cancer fatality (LCF) to the truck crew, the general population, and the maximum exposed individual (MEI). The worst-case results for the truck crew, general population, and MEI all occur during the shipment to Mercury, Nevada. However, all values were calculated to be less than 1 (largest value being 2.4×10^{-2} for the crew), so risks to these receptors are considered negligible. The population dose resulting from the proposed action is estimated to be 5.5 person-rem, resulting in estimated 0.0028 latent cancer fatalities. This would result in no anticipated latent cancer fatalities from the proposed action.

Vehicle-Related Impacts – Potential vehicle-related impacts, including expected accidents, expected fatalities from accidents, and impacts from vehicle emissions were evaluated. All accident fatalities are less than one, therefore no fatalities resulting from the proposed action are anticipated.

c) Risk Associated with Rail Transport

Radiological Impacts from normal Rail Transportation – The potential radiological effects of routinely transporting LLW, MLLW, and TRU waste by rail from Paducah to each of the potential final destination sites were evaluated. Rail shipments were evaluated for the probability of an LCF to the train crew, the general population, and the MEI. All values were calculated to be less than 1 (largest value being 0.046 for the population), so risks to these receptors are considered negligible. The population dose resulting from the proposed action is estimated to be 6.2 person-rem, resulting in estimated 0.0032 latent cancer fatalities. This would result in no anticipated latent cancer fatalities from the proposed action.

Rail-Related Impacts – Potential rail-related impacts, including expected accidents and expected fatalities from accidents were evaluated. All fatalities are less than one, therefore no fatalities resulting from the proposed action are anticipated.

Ecological Resources

Impacts to ecological resources were compared to the analysis in the Waste Disposition EA (DOE/EA-1339. A biological assessment of impacts to threatened and endangered species was completed for the proposed action. The biological assessment concludes that the proposed action would be unlikely to adversely affect the Indiana Bat or any mussel species of concern. No significant impacts would be expected to ecological resources.

Cumulative Effects

Potential environmental cumulative impacts that could result from the proposed disposition of waste were compared with the impacts identified in the Waste Disposition EA. The disposition of all of the waste was included in the Waste Disposition EA analysis of cumulative impacts and found not to be significant. Therefore the cumulative impacts have not changed from those described in the Waste Disposition EA and were not addressed any further.

NO ACTION ALTERNATIVE

If DOE decides to take no action on the 17,600 m^3 of additional material, then it would remain on-site until disposition during D&D of each area that contains the material. These activities were analyzed as the Proposed Action in the Waste Disposition EA. Since the impacts have not changed it is not analyzed further.

ENHANCED STORAGE ALTERNATIVE

Under the Enhanced Storage Alternative, the additional material would remain on-site, be characterized to determine what portion is waste, and the waste would be stored in new or upgraded buildings designed to withstand earthquakes or other disasters. Storage of up to 28,600 m^3 of waste was included in the Enhanced Storage Alternative analysis in the Waste Disposition EA. Since the impacts have not changed it is not analyzed further

DETERMINATION: Based on the findings of this EA Addendum, DOE has determined that the proposed action does not constitute a major federal action that would significantly affect the quality of the human environment within the context of the National Environmental Policy Act. Therefore, preparation of an environmental impact statement is not required.

Issued at Oak Ridge, Tennessee, this 11th day of December 2003.

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