15-U-407
On-Site Waste Disposal Facility- Cell 1 Design and Construction
Paducah, Kentucky
Project is for Design and Construction

1. Summary and Significant Changes

Significant Changes

This project data sheet is an update of the FY 2015 President's Budget Request. There was no budget request or corresponding data sheet for this project in the FY 2016 Request. No scope changes have been made to this project. The project schedule has been revised due to ongoing regulatory discussions necessary to complete documentation supporting the Record of Decision approval. The delay changed the Critical Decision (CD) CD-4 date from FY 2020 to FY 2022 and the rough order of magnitude cost estimate range changed from $110,000K - $290,000K to $110,000K - $311,500K.

The project estimates for both TEC-Design and TEC-Construction have increased due to escalation, based on the latest project schedule estimates. Additionally, the design cost has been re-evaluated to reflect lessons learned from the On-Site Waste Disposal Facility project at Portsmouth and regulator uncertainties that will impact design and construction costs. The project Other Project Cost (OPC) decreased from the last submittal due to removal of pre-ROD signature work that will be performed under site operations.

Summary

This project currently is developing CD-0 (Approve Mission Need) and CD-1 (Approve Alternative Selection and Cost Range) per the requirements of DOE O 413.3B.

A Federal Project Director has been assigned to this project and has approved this Construction Project Data Sheet.

This Project Data Sheet does not include a new start for the budget year.

The Comprehensive Environmental Response, Compensation, and Liability Act process ongoing at the Paducah Gaseous Diffusion Plant in Paducah, Kentucky, will result in a decision either to construct and operate an On-Site Waste Disposal Facility, to take no action to construct and operate such a facility, or use off-site disposal. References to an On-Site Waste Disposal Facility in this document are intended only to reflect the possibility that the Comprehensive Environmental Response, Compensation, and Liability Act process could result in a decision to construct and operate such a facility and should not be interpreted as presupposing the outcome of the Comprehensive Environmental Response, Compensation, and Liability Act process.

The funding reflected in this FY 2017 Budget request for the On-Site Waste Disposal Facility at the Paducah Gaseous Diffusion Plant in Paducah, Kentucky, is estimated pending final approval of the project's Record of Decision which is expected between the fourth Quarter of FY 2016 and the second Quarter of FY 2017. This data sheet assumes the high-end of this range, but is subject to change based on the timing of the final Record of Decision approval.

In the event an On-Site Waste Disposal Facility is the selected remedy, the specific line item funding request for FY 2017 would support design for the On-Site Waste Disposal Facility and remedial design site investigation work plan document preparation and implementation. No TEC funding will be spent until the Record of Decision and subsequent Critical Decision 0/1 have been approved.

This project is being conducted in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act process. The Comprehensive Environmental Response, Compensation, and Liability Act process will result in a decision of no action, construction of an On Site Waste Disposal Facility, or off-site disposal. In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act process and the requirements of the Paducah Federal Facilities Agreement, DOE is currently conducting this analysis, including the remedial investigation/feasibility study, remedy development and evaluation, and remedy selection process, to identify the preferred approach for

disposition of the projected waste volumes. It is anticipated that the process will result in the selection of the design and construction of an On Site Waste Disposal Facility at the Paducah Gaseous Diffusion Plant.

2. Critical Decision (CD) and D&D Schedule

	(fiscal quarter or date)							
	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2015 Request	3Q FY 2015	N/A	3Q FY 2015	FY 2017	N/A	FY 2017	N/A	FY 2020
FY 2017 Request	2Q FY 2017	N/A	2Q FY 2017	FY 2019	FY 2019	FY 2019	N/A	FY 2022

*****All dates are based on current schedules and are subject to change until the baseline is validated and approved. The above dates do not reflect schedule contingency. The schedules are only estimates and are consistent with the high end of the schedule ranges.

CD-0 – Approve Mission Need for a construction project with a conceptual scope and cost range
Conceptual Design Complete – Actual date the conceptual design was completed (if applicable)
CD-1 – Approve Design Scope and Project Cost and Schedule Ranges
CD-2 – Approve Project Performance Baseline
Final Design Complete – Estimated/Actual date the project design will be/was complete (d)
CD-3 – Approve Start of Construction
D&D Complete –Completion of D&D work (see Section 9)
CD-4 – Approve Start of Operations or Project Closeout
PB – Indicates the Performance Baseline

3. Baseline and Validation Status ($K)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Design	OPC, Construction	OPC, Total	TPC
FY 2015 Request	47,486	234,500	281,986	514	7,500	8,014	290,000
FY 2017 Request	55,674	247,726	303,400	0	8,100	8,100	311,500

* Costs are estimated based on the CD-0 Rough Order of Magnitude Cost Range, $110,000K - $311,500. All numbers are subject to change until the baseline is validated and approved at CD-2. The numbers are only estimates and are consistent with the high end of the cost ranges.

4. Project Description, Justification, and Scope

Scope

If an On-Site Waste Disposal Facility is selected as the remedy, the scope of this project would include the design of an On-Site Waste Disposal Facility, currently being evaluated with an air capacity up to eight million cubic yards, including support facilities and infrastructure. An On-Site Waste Disposal Facility would be able to provide on-site waste disposal capacity for anticipated demolition debris and environmental remediation waste from the Paducah cleanup projects. This Construction Project Data Sheet addresses a potential On-Site Waste Disposal Facility Cell 1 Design and Construction.

In the event an On-Site Waste Disposal Facility is the selected remedy, the specific line item funding request for FY 2017 would support design for the On Site Waste Disposal Facility and remedial design site investigation work plan document

preparation and implementation. The remedial design site investigation field work likely could include, but not be limited to, hydrogeological studies, monitoring well installation, geotechnical field investigation, shear wave velocity testing for seismic resistance, wetlands delineation, floodplains assessment and threatened and endangered species study. The On-Site Waste Disposal Facility Cell 1 Design and Construction Project (henceforth referred to as "the project") would include, but would not be limited to, the design and construction of the waste disposal facility and necessary infrastructure. Components of the current conceptual design include geo-synthetic liners, leachate collection systems, support facilities, and necessary infrastructure.

The project would be developed and conducted in accordance with the project management requirements of the DOE Order 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements would be met throughout project execution.

This project does not include the final cap for Cell 1 of the On-Site Waste Disposal Facility. It is anticipated that a separate project data sheet will be developed in the future to place final caps on multiple cells. Subsequent construction of cells related to a potential On-Site Waste Disposal Facility would be separate construction projects, each to be managed as separate line-item capital asset projects, including individual sets of project data sheets. The construction of the first cell and necessary site preparations and infrastructure activities would need to be completed in sufficient time to ensure availability of on-site disposal for anticipated environmental remediation and demolition projects.

Justification

The mission need is based on the projected waste volumes identified in the comprehensive Paducah lifecycle scope and the alternative analysis being conducted to determine whether an On Site Waste Disposal Facility should be selected as the remedy. The Comprehensive Environmental Response, Compensation, and Liability Act analysis includes the development of a conceptual design to support the evaluation.

Due to the projected waste volumes identified in the comprehensive Paducah lifecycle scope, it was determined that analysis was necessary, in accordance with Comprehensive Environmental Response, Compensation, and Liability Act and the Paducah Federal Facilities Agreement, to evaluate potential alternatives to address the disposition of those projected waste volumes associated with remediation actions and demolition of Paducah Gaseous Diffusion Plant facilities. The alternatives being evaluated are no action (required by Comprehensive Environmental Response, Compensation, and Liability Act), the potential construction and operation of an On-Site Waste Disposal Facility or off-site disposal. In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act process and the requirements of the Paducah Federal Facilities Agreement, DOE is currently conducting this analysis, including the remedial investigation/feasibility study, remedy development and evaluation, and remedy selection process, to identify the preferred approach for disposition of the projected waste volumes.

An On-Site Waste Disposal Facility would be a landfill to provide on-site waste disposal capacity for anticipated demolition debris and environmental remediation waste from the Paducah cleanup projects. This Project Data Sheet addresses a potential On-Site Waste Disposal Facility Cell 1 Design and Construction Project.

The project is being conducted in accordance with the project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets.

5. Financial Schedule

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	N/A	N/A	0
FY 2016	N/A	N/A	0
FY 2017	N/A	N/A	10,923

FY 2018	N/A	N/A	26,006
FY 2019	N/A	N/A	18,745
Outyears	N/A	N/A	0
Total, Design	N/A	N/A	55,674
Construction			
FY 2015	N/A	N/A	0
FY 2016	N/A	N/A	0
FY 2017	N/A	N/A	0
FY 2018	N/A	N/A	0
FY 2019	N/A	N/A	33,281
FY 2020	N/A	N/A	41,953
FY 2021	N/A	N/A	63,802
Outyears	N/A	N/A	108,690
Total, Construction	N/A	N/A	247,726
TEC			
FY 2015	8,486	8,486	0
FY 2016	0	0	0
FY 2017	2,437	2,437	10,923
FY 2018	26,006	26,006	26,006
FY 2019	52,026	52,026	52,026
FY 2020	41,953	41,953	41,953
FY 2021	63,802	63,802	63,802
Outyears	108,690	108,690	108,690
Total TEC	303,400	303,400	303,400
Other Project Cost (OPC)			
OPC except D&D			
FY 2015	0	0	0
FY 2016	0	0	0
FY 2017	0	0	0
FY 2018	3,067	3,067	3,067
FY 2019	3,626	3,626	3,626
FY 2020	0	0	0
FY 2021	0	0	0
Outyears	1,407	1,407	1,407
Total, OPC except D&D	8,100	8,100	8,100
OPC			
FY 2015	0	0	0
FY 2016	0	0	0
FY 2017	0	0	0
FY 2018	3,067	3,067	3,067
FY 2019	3,626	3,626	3,626
FY 2020	0	0	0
FY 2021	0	0	0
Outyears	1,407	1,407	1,407
Total, OPC	8,100	8,100	8,100

Total Project Cost (TPC)			
FY 2015	8,486	8,486	0
FY 2016	0	0	0
FY 2017	2,437	2,437	10,923
FY 2018	29,073	29,073	29,073
FY 2019	55,652	55,652	55,652
FY 2020	41,953	41,953	41,953
FY 2021	63,802	63,802	63,802
Outyears	110,097	110,097	110,097
Total, TPC	311,500	311,500	311,500

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	28,261	24,384	N/A
Contingency	27,413	23,102	N/A
Total Design	55,674	47,486	N/A
Construction			
Building & Site Work	125,749	116,139	N/A
Contingency	121,977	118,361	N/A
Total Construction	247,726	234,500	N/A
Total, TEC	303,400	281,986	N/A
Contingency, TEC	149,390	141,463	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	944	866	N/A
Start-Up	0	0	N/A
Contingency	3,982	3,051	N/A
Other OPC	3,174	4,097	N/A
Total, OPC except D&D	8,100	8,014	N/A
Total, OPC	8,100	8,014	N/A
Contingency, OPC	3,982	3,051	N/A
Total, TPC	311,500	290,000	N/A
Total, Contingency	153,372	144,514	N/A

7. Schedule of Appropriation Requests

Request		Prior Years	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2015 Request	TEC	0	8,486	24,000	58,000	38,000	68,000	85,500	281,986
	OPC	0	514	3,000	4,000	200	0	300	8,014
	TPC	0	9,000	27,000	62,000	38,200	68,000	85,800	290,000

		Prior Years	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Outyears	Total
FY 2017 Request	TEC	8,486	2,437	26,006	52,026	41,953	63,802	108,690	303,400
	OPC	0	0	3,067	3,626	0	0	1,407	8,100
	TPC	8,486	2,437	29,073	55,652	41,953	63,802	110,097	311,500

8. Related Operations and Maintenance Funding Requirements

Security costs for this project are not included in the cost presented. Security costs are funded from a separate appropriation (Defense appropriation for PBS PA-0020). Security costs for this project are nominal, and consequently, are not included in the costs of this data sheet.

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	FY 2022
Expected Useful Life (duration of waste placement operations)	3 – 5 years [1]
Expected Future Start of D&D of this Capital Asset (fiscal quarter)	N/A [2]

[1] Annual estimate for this project is pre-Critical Decision-0/1 and only represents cost during waste placement. The lifecycle estimate does not include post-closure activities or long-term surveillance and maintenance.

[2] No D&D is planned related to this project.

Construction of the OSWDF Cell 1 has no direct operations, maintenance, and utilities.

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	10,000	10,000	50,000	50,000
Utilities	N/A	N/A	N/A	N/A
Maintenance	N/A	N/A	N/A	N/A
Total, Operations & Maintenance*	10,000	10,000	50,000	50,000

*Utilities and Maintenance costs are included in the Operations.

9. Required D&D Information

Area	Square Feet
N/A*	N/A

*No D&D is planned related to this project.

This project would provide a new capability and would not replace a current capability. Thus, the basis for this project's justification would not be replacing current facilities; accordingly, no existing facilities would be demolished in conjunction with this project.

The location of this construction project is an environmental management closure site and, therefore, is exempt from the "one-for-one" requirement.

10. Acquisition Approach

The acquisition approach for the project would be through competitive bids and the use of consent packages, consistent with current Paducah prime contract requirements under Federal Acquisition Regulation 44. An Acquisition Strategy for the project will be developed for submission of Critical Decision-1. An Acquisition Plan for the remaining design efforts and construction phases of the project will be prepared prior to Critical Decision-2/3 following the finalization of the Record of Decision.