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Maximizing Operational Efficiencies in Waste Management on the Hanford Plateau Remediation Contract in a Downturned Market - 13484

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ABSTRACT

Recent changes in DOE priorities and funding have pressed DOE and its contractors to look for innovative methods to sustain critical operations at sites across the Complex. At the Hanford Site, DOE Richland Operations and its prime contractor, CH2M HILL Plateau Remediation Company (CHPRC), have completed in-depth assessments of the Plateau Remediation Contract (PRC) operations that compared available funding to mission and operational objectives in an effort to maintain requisite safety and compliance margins while realizing cost savings that meet funding profiles. These assessments included confirmation of current baseline activities, identification of potential efficiencies, barriers to implementation, and potential increased risks associated with implementation. Six operating PRC waste management facilities were evaluated against three possible end-states: complete facility closure, maintaining base operations, and performing minimum safe surveillance and maintenance activities. The costs to completely close evaluated facilities were determined to be prohibitively high and this end-state was quickly dropped from consideration. A summary of the analysis of remaining options by facility, efficiencies identified, impact to risk profiles, and expected cost savings is provided in Table I.

The expected cost savings are a result of:

- right-sizing and cross-training work crews to address maintenance activities across facilities
- combining and sequencing “like-moded” operational processes
- cross-cutting emergency planning and preparedness staffing
- resource redistribution and optimization
- reducing areas requiring routine surveillance and inspection

For the efficiencies identified, there are corresponding increases in risk, including a loss of breadth and depth of available resources; lengthened response time to emergent issues; inability to invest in opportunities for improvement (OFIs); potential single-point failures or non-compliances due to resource scarcity; limited cross-training capability; and reduced capability to respond to changes in DOE priorities.

Finally, there are many challenges to achieving these cost savings. With a workforce nearing retirement effective succession planning becomes critical to success and requires establishing a balance between the cost of hiring and training and cost-saving activities. With six active waste management facilities spread across nearly 15 square miles, scheduling and deploying cross-trained surveillance and maintenance teams is a logistical challenge, particularly as the

Table I. Six Active Waste Management Facilities were Evaluated

	Planned Efficiencies						Additional Risks						Planned Annual Savings FY13 ($M)	Actual Savings 1st Quarter FY13 ($M)
	Resource redistribution & optimization	Combined administrative / records functions	Eliminate redundant resources/capabilities	Reduce areas requiring surveillance / maintenance	Combine maintenance and administrative resources	Provide Project-wide Support	Breadth/Depth of Resources	Response times to emergent operational issues or events	Resource Scarcity	No investment in OFIs	Limited cross-training ability	Limited response to changing DOE priorities		
Facility/Mission														
Waste Encapsulation & Storage Facility (WESF)														
Stores 74 M Curies (Cu) of Cesium and 32 M Cu of strontium in ~2000 capsules.	♦	♦	♦		♦	♦	♦	♦	♦	♦	♦	♦	308.7	126.5
Canister Storage Building (CSB)														
Stores 56 M Cu of spent nuclear fuel in 400 multi-canister overpacks.	♦	♦			♦	♦	♦	♦	♦	♦	♦		249.7	93.6
Central Waste Complex & Low-Level Waste Burial Grounds (CWC/LLBG)														
CWC receives, stores, provides limited treatment of LLW, MLLW, and TRU. LLBG provides disposal	♦			♦	♦	♦	♦	♦	♦	♦	♦		1668.5	198.6
200 Area Liquid Effluent Facilities (LEF)														
Treat hazardous, CERCLA/RCRA- regulated liquids generated at the Hanford Site.	♦	♦			♦	♦	♦	♦	♦	♦	♦	♦	1,479.6	101.9
Waste Receiving & Processing (WRAP) Facility														
Remote- and Contact-Handled TRU waste repackaging, characterization			♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	653.6	89.3
T Plant Complex														
Contact-Handled TRU waste repackaging and irradiated fuel assembly storage.	♦			♦	♦	♦							1693.7	604.5
Project Management Improvements including LPCS Facilities Integration and SW Ready to Serve														
Oversight of all active waste management facilities on the PRC	♦	♦	♦			♦	♦	♦	♦	♦	♦	♦	3103.3	1006.6
TOTAL SAVINGS													$8926.4	$2221.0

loss of funding has not diminished emphasis by regulatory agencies placed on the safe and compliant performance of DOE and its contractors.

As reflected in Table I, efficiencies are currently being implemented on the Hanford Plateau Remediation Contract (PRC) that deliver cost savings that align with the current site budget while maintaining critical capabilities. It is currently estimated that these efficiencies will result in a cost savings of approximately $9 million for FY13 in base and minimum safe operations on the PRC – a cost reduction of more than 13 percent over FY12 and nearly 30 percent over FY09 levels.

INTRODUCTION

In October 2008 the Plateau Remediation Contract (PRC) commenced at the U.S. Department of Energy Hanford Site. The scope of the PRC includes management of several waste storage, treatment, and processing facilities on the Hanford Central Plateau. Each facility includes unique capabilities that are central to accomplishing the DOE mission to remediate risks to Hanford workers, the public, and the environment; meet regulatory milestones; and minimize long-term surveillance and maintenance risks and costs to the DOE.

This performance-based contract was awarded to CH2M HILL Plateau Remediation Company (CHPRC) based on innovations and cost savings proposed by CHPRC to deliver safe and efficient environmental cleanup, including primary waste management functions. After three years on the contract, and significant changes in priority and funding levels, CHPRC collaborated with the DOE Richland Operations to revisit these early concepts to find efficiencies that maximized safe, compliant, and efficient operations to fully support DOE objectives and state, local, and federal regulations and agreements and to achieve more substantial cost savings without loss of the safety and compliance margins. This collaborative evaluation included examining each of the active waste management facilities to identify cost savings measures that maintain capabilities for future use.

These efficiencies include right sizing and cross-training of work crews to address maintenance activities across facilities, combining and sequencing “like-moded” operational processes, and cross cutting emergency planning and preparedness crewing and staffing, just to name a few actions taken.

For example, maintenance crews once trained and qualified to serve only the Solid Waste Operations Complex (SWOC) Waste Receiving and Processing Facility (WRAP) are now cross-trained to perform these same maintenance activities at other facilities within SWOC, such as T Plant and the Central Waste Complex (CWC). This provides significant cost savings in facility maintenance and training while allowing better utilization of significantly reduced resources. Other cost saving measures being implemented include organizational changes that 1) better deliver DOE-RL work scope for fiscal year 2013 and beyond, 2) identify efficiencies and eliminate organizational duplications, and 3) position CHPRC to respond quickly and efficiently to work scope changes by DOE-RL.

DISCUSSION

Waste management facilities were grouped into two broad categories: 1) facilities that must be maintained in minimum safe operational mode to ensure the safe and compliant storage or treatment of materials, and 2) facilities that have no currently funded mission. Facilities in the first category include the WESF, CSB, CWC/LLBG, and ETF. The T Plant Complex and WRAP facility comprise the facilities with no currently funded mission.

Cost savings were estimated against the FY13 budget established in the Hanford Performance Measurement Baseline (PMB). The PMB is DOE's tool for measuring project performance that includes the life-cycle scope, schedule, and cost baseline (time-phased, with resources and other cost information); the contract statement of work; approved interface control documents; and work breakdown structure level 5 dictionaries.

Brief descriptions of each facility and the efficiencies identified are provided below. In addition, known risks are identified for each facility along with the additional risks associated with implementing these efficiencies.

FY13 Budget ($K)	Cost Savings ($K)	Total ($K)	Actual Savings 1st Quarter FY13 ($K)
6579.8	308.7	6271.2	126.5

Fig. 1. Waste Encapsulation Storage Facility

Waste Encapsulation Storage Facility (WESF)

WESF, shown in Figure 1, was originally built to convert solutions of radioactive cesium and strontium into their respective solid compounds. Currently the building holds 74 million curies of cesium in 1335 capsules and another 32 million curies of strontium in 601 capsules. After processing these elements were initially stored in single-shell tanks. To reduce the temperature generated within the tanks, the cesium and strontium were transferred into stainless steel, double shell capsules and placed into pools of water. In the past a few cesium capsules have been shipped offsite for testing and demonstration including sewage sludge sterilization, fruit and pork disinfestations, and medical device sterilization. These have since been returned to WESF and the facility continues to provide safe storage of the cesium and strontium capsules until they can be removed for final disposition.

WESF scope includes all activities required to operate and maintain the WESF facilities and associated waste sites, structures, operating systems and equipment, and monitoring systems within the authorization envelope; to prepare and package waste streams for disposition as

required; and to maintain systems necessary for environmental compliance, radiological control, personnel safety, and capsule integrity. WESF maintains a fully established Integrated Environment, Safety, and Health (ES&H) Management System (ISMS) based safety program; environment all compliant operations which meet applicable permit requirements; As-Low-As-Reasonably-Achievable (ALARA) radiation control surveys and access control; and a staff trained in ES&H, operational, and administrative aspects of facility operations.

At the time of this evaluation WESF was already operating in a minimum safe mode that included surveillances and maintenances and personnel required to safely monitor and store cesium and strontium capsules until they can be finally disposition at a National Repository. This limits opportunities for operational efficiencies. However, the cost savings achieved in the first quarter of FY13 have exceeded expectations by ~$0.5 million (See Figure 1).

Planned Efficiencies

- Redistributing engineering resource across the project – Reorganization and consolidation of engineering capabilities from facility-specific to project-wide allowed for resource optimization.
- Combining administrative and records function between WESF and the CSB – with similar missions, there was synergy in combining these functions.
- Eliminating redundant, standby personnel capabilities – It was determined that the Process Crane Operator standby capability could be eliminated with minimal increase in the WESF risk profile.

Impacts to the WESF Risk Profile are discussed in Table II.

Table II. Risk Evaluation for Implementing Efficiencies at WESF

Previously Known and Accepted Risks	
Project Industrial Accident or Personnel Contamination	
WESF Major System/Equipment Failure	
Aging Building Systems/components Problems Impact Operations and Surveillance & Maintenance Activities	
Results of External Audits/Assessments Impact Operations	
Additional Risks Identified	**Discussion**
Lack of breadth and depth of resources	Redistribution and consolidation of resources to allow for resource optimization has reduced the breadth of experienced facility resources.
Response times to emergent items	Emergent items not requiring immediate attention will be prioritized and worked as resources allow, which may mean significant delays in response time and potential inability to support short-turnaround requests.
Potential non-compliances	The opportunity for single-point failures and non-compliances is increased due to reduced resources.
Limited ability to cross train	Due to fewer resources and work-force nearing retirement, there are few opportunities for efficient and effective succession planning.
Inability to invest in opportunities for improvement	With fewer resources and reduced operations, there is a limited capability to commit resources to developing OFIs.

Canister Storage Building (CSB)

The 42,000 square foot CSB contains equipment to support the receipt, staging, and interim storage of Multi-Canister Overpacks (MCOs) which contain spent nuclear fuel (SNF). Approximately 2300 tons of spent nuclear fuel with roughly 56 million curies of radioactivity is contained in 400 MCOs at the facility. The MCOs are held in 40-foot carbon steel tubes positioned vertically in a below-grade concrete vault. CSB has three concrete vaults capable of holding 200 tubes. Currently only one vault contains MCOs. The other two are available for additional storage. The MCOs will be safely stored in the tubes until they are permanently placed in a National Repository.
The scope of activities at the CSB includes operation and maintenance of facilities and associated structures, operating systems and equipment, and monitoring systems within the authorization agreement. This includes preventive and corrective maintenance tasks necessary to continue safe, cost-effective, and compliant operations. This encompasses a fully established Integrated Environment, Safety, and Health (ES&H) Management System (ISMS) based safety program; environment all compliant operations which meet applicable permit requirements; As-Low-As-Reasonably-Achievable (ALARA) radiation control surveys and access control; and a staff trained in ES&H, operational, and administrative aspects of facility operations.

FY13 Budget ($K)	Cost Savings ($K)	Total ($K)	Actual Savings 1st Quarter FY13 ($K)
6458.9	249.7	6209.2	93.6

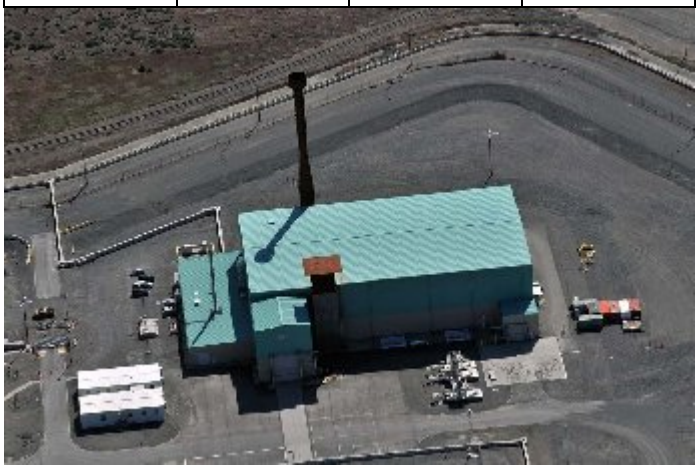

Fig. 2. Canister Storage Building

Cost savings expected and achieved to date at the CSB are shown in Figure 2. Like WESF, cost savings achieved in the first quarter of FY13 at the CSB have exceeded expectations.

Planned Efficiencies

- Redistributing engineering resource across the project – Reorganization and consolidation of engineering capabilities from facility-specific to project-wide allowed for resource optimization.

Impacts to the CSB Risk Profile are discussed in Table III.

Table III. Risk Evaluation for Implementing Efficiencies at CSB

Previously Known and Accepted Risks	
Project Industrial Accident or Personnel Contamination	
CSB Crane Failure	
Aging Building Systems/components Problems Impact Operations and Surveillance & Maintenance Activities	
Results of External Audits/Assessments Impact Operations	
Additional Risks Identified	**Discussion**
Lack of breadth and depth of resources	Redistribution and consolidation of resources to allow for resource optimization has reduced the breadth of experienced facility resources.
Limited ability to respond to changing priorities	Fewer personnel spread over entire project, not specifically assigned to one facility, limit the ability to reassign committed resources as priorities change.
Response times to emergent items	Emergent items not requiring immediate attention will be prioritized and worked as resources allow, which may mean significant delays in response time and potential inability to support short-turnaround requests.
Reduced capability to respond to significant issues/operational events	Reduced resources, spread over several facilities may not be able to redeploy quickly to respond to issues or events.
Potential non-compliances	The opportunity for single-point failures and non-compliances is increased due to reduced resources.
Limited ability to cross train	Due to fewer resources and work-force nearing retirement, there are few opportunities for efficient and effective succession planning.
Inability to invest in opportunities for improvement	With fewer resources and reduced operations, there is a limited capability to commit resources to developing opportunities for improvement.

Central Waste Complex/Low-Level Burial Grounds (CWC/LLBG)

The CWC and LLBG are two of the facilities that comprise the Solid waste Operations Complex (SWOC) on Hanford's Central Plateau. The CWC is used to receive and ship waste from on-site and off-site facilities, ship waste to off-site facilities for treatment and provide waste storage and limited treatment of RCRA mixed waste, radioactive polychlorinated biphenyl (PCB) waste, TRU waste, TRU mixed waste, and LLW from both on-site and off-site generators. The operational storage capacity of the CWC is approximately 64,000 55-gallon drum equivalents. The facility includes 12 small mixed waste storage buildings, 7 large storage buildings, 12 RCRA-compliant modules for storage of alkali metal products not classified as waste, and 27 modules for storing low-flash-point mixed wastes.

The LLBG provide storage and disposal of LLW and mixed LLW within the mixed waste trenches, as well as defueled Naval reactor compartments (see Figure 4) in a specially designated area. Many sections of the LLBG contain retrievably stored LLW and TRU from both on-site and off-site generators. This waste will be stored until it can be removed, characterized,

Fig. 4. Reactor Compartments being offloaded at the LLBG.

processed and shipped to the appropriate permanent storage facility. LLW will be disposed at the ERDF and TRU will be shipped to WIPP.

The CWC is maintained in a ready-to-serve status to provide for the interim storage of low-level, mixed low-level, and TRU waste and to accommodate waste receipts from DOE-RL approved generators. Operations include corrective and preventive maintenance activities associated with maintaining the facility in a minimum safe status as well as actively receive waste shipments for storage. The LLBG is also maintained in a ready-to-serve status to provide storage and disposal of LLW and MLLW and Naval reactor compartments. Activities at both the CWC and LLBG include operation in a safe, compliant, and cost-effective manner in accordance with DOE requirements, authorization basis documents, State and Federal regulations, the Tri-Party Agreement (TPA), and waste acceptance criteria.

Cost savings expected and achieved to date at the CWC are shown in Figure 3. These savings are currently less than planned due to increased unforeseen work scope and emergent issues for which funding has not yet been identified. To address these issues, the contractor is incurring costs that skew the current costs savings data. Once funding has been identified, the cost savings will reset to planned levels.

FY13 Budget ($K)	Cost Savings ($K)	Total ($K)	Actual Savings 1st Quarter FY13 ($K)
7547.7	1668.5	5879.2	198.6

Fig. 3. Central Waste Complex/Low-Level Burial

Planned Efficiencies

Several opportunities were identified for cost savings within the SWOC facilities that resulted in significant savings at CWC/LLBG with little impact to facility availability.

- Shared resources between all SWOC facilities
- Reducing waste volumes in storage resulting in fewer resources required for inspections and surveillances
- Prioritizing and systematically executing SWOC requirements

Impacts to the CWC/LLBG Risk Profile are discussed in Table IV.

Table IV. Risk Evaluation for Implementing Efficiencies at CWC/LLBG

Previously Known and Accepted Risks	
Project Industrial Accident or Personnel Contamination	
Aging Building Systems/components Problems Impact Operations and Surveillance & Maintenance Activities	
Results of External Audits/Assessments Impact Operations	
Additional Risks Identified	**Discussion**
Lack of breadth and depth of resources	Redistribution and consolidation of resources to allow for resource optimization has reduced the breadth of experienced facility resources.
Response times to emergent items	Emergent items not requiring immediate attention will be prioritized and worked as resources allow, which may mean significant delays in response time and potential inability to support short-turnaround requests.
Reduced capability to respond to significant issues/operational events	Reduced resources, spread over several facilities may not be able to redeploy quickly to respond to issues or events.
Potential non-compliances	The opportunity for single-point failures and non-compliances is increased due to reduced resources.
Inability to invest in opportunities for improvement	With fewer resources and reduced operations, there is a limited capability to commit resources to developing opportunities for improvement.

200 Area Effluent Treatment Facilities (ETF)

The ETF (Figure 5) is a RCRA-permitted industrial waste water treatment facility which treats dilute liquid waste streams generated on the Hanford Site. It is part of a complex which includes the Liquid Effluent Retention Facility (LERF) and the Treated Effluent Disposal Facility (TEDF). ETF receives liquids from the LERF, a federally permitted facility with three liquid storage basins. Within ETF the waste water undergoes a number of treatment processes to remove radioactive and hazardous contaminants. The treated non-hazardous and non-radioactive liquid waste is collected, stored, tested and disposed of through the systems at the TEDF. The liquid waste is stored until tests confirm that various radioactive and hazardous contaminants have been removed or lowered to levels that make it acceptable for discharge to the State-

FY13 Budget ($K)	**Cost Savings ($K)**	**Total ($K)**	**Actual Savings 1st Quarter FY13 ($K)**
20,241.8	1479.6	18,767.2	101.9

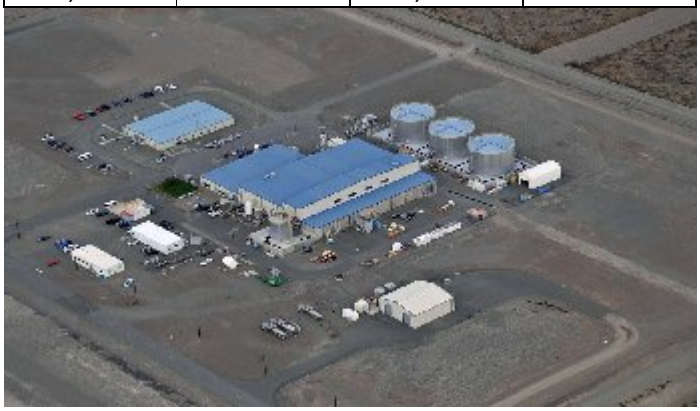

Fig. 5. 200 Area Effluent Treatment Facilities

Approved Land Disposal Site (SALDS) under a State discharge permit. TEDF has the capability to collect and safely dispose of nearly 2 billion gallons of liquid per year in accordance with its State discharge permit.

The scope of this activity includes the safe, cost-effective, and environmentally compliant operation and maintenance of the LERF, ETF, 200 Area TEDF, 300 Area TEDF and 340 Waste Handling Facility. All facilities are maintained operational with the exception of the 340 Waste Handling Facility which is currently maintained in surveillance and maintenance mode only.

The management and administration of these facilities and the WESF and CSB have been consolidated under one activity known as the Liquid Waste and Fuel Storage (LWFS) Integration project. Support functions that are common to these facilities have been integrated to improve efficiency by eliminating redundancy of effort and enhancing coordination of similar activities.

These facilities maintain a fully established ISMS-based safety program; environmentally compliant operations that meet permit requirements; ALARA surveys and access control; and a staff trained in all ES&H operational and administrative aspects of facility operations.

Specific activities associated with safe plant operations include engineering, radiological control, preventive and predictive maintenance, corrective maintenance, and environmental sampling, monitoring, reporting, and permitting. Operations and maintenance are defines as those operations, maintenance, engineering, surveillances, reporting and support activities required by DOE, State and Federal regulations, and facility permits. Maintenance provides surveillance and maintenance of structures, systems, components, and processes to ensure operation within the approved safety and compliance requirements envelope, including preventive maintenance and calibrations, repair of failed and malfunctioning equipment, walkdowns of safety systems, equipment and facility grounds, and routine radiological surveys.

Cost savings at the ETF facilities appear to be significantly less than planned. This is due to increased unforeseen work scope and emergent issues for which funding has not yet been identified. To address these issues, the contractor is incurring costs that skew the current costs savings data. Once funding has been identified, the cost savings will reset to planned levels.

Planned Efficiencies

Several cost savings were realized through the consolidation of like facilities into the LWFS which allowed resources to be reassigned and cross-trained across several like facilities:

- Combined maintenance and operations administrative support
- Combined maintenance resources across like facilities optimized resource utilization
- Efficient maintenance scheduling and execution reduced the need for Operations Field Work Supervision
- Reduced dedicated resources for Corrective Action System, relying instead on project-wide support
- Increased emphasis on managing planned absence coverage within existing resources

Impacts to the ETF Risk Profile are discussed in Table V.

Table V. Risk Evaluation for Implementing Efficiencies at ETF

Previously Known and Accepted Risks	
Project Industrial Accident or Personnel Contamination	
Aging Building Systems/components Problems Impact Operations and Surveillance & Maintenance Activities	
Results of External Audits/Assessments Impact Operations	
Additional Risks Identified	**Discussion**
Lack of breadth and depth of resources	Redistribution and consolidation of resources to allow for resource optimization has reduced the breadth of experienced facility resources.
Response times to emergent items	Emergent items not requiring immediate attention will be prioritized and worked as resources allow, which may mean significant delays in response time and potential inability to support short-turnaround requests.
Reduced capability to respond to significant issues/operational events	Reduced resources, spread over several facilities may not be able to redeploy quickly to respond to issues or events.
Potential non-compliances	The opportunity for single-point failures and non-compliances is increased due to reduced resources.
Limited ability to cross train	Due to fewer resources and work-force nearing retirement, there are few opportunities for efficient and effective succession planning.
Inability to invest in opportunities for improvement	With fewer resources and reduced operations, there is a limited capability to commit resources to developing opportunities for improvement.

Waste Receiving and Processing (WRAP) Facility

The WRAP facility consists of a 51,000 square foot processing building, a main maintenance building, two waste storage buildings, the Mobile Assay Unit (or SuperHENC) and the High Energy Real-Time Radiography (HERTR) structure and control center. The WRAP facility was constructed to receive, characterize, process and ship low-level (LLW) and transuranic (TRU) waste containers for permanent disposal. Characterization work at WRAP includes non-destructive examination and non-destructive assay to determine the final disposition pathway for the waste. TRU waste is repackaged in glove boxes to allow for the treatment and removal of prohibited items to meet the Waste Isolation Pilot Plant (WIPP) acceptance criteria. At the facility LLW can be sent to the onsite Environmental Remediation Disposal Facility (ERDF) and TRU waste is loaded into TRUPACT-II shipping containers and shipped to WIPP in New Mexico for final disposal.

The WRAP is to be maintained in a dormant condition in accordance with DOE requirements, authorization basis documents, State and Federal regulations, the TPA, permit conditions, and acceptance criteria for LLW, MLLW, and TRU waste. No operational systems, equipment, or direct staffing will be maintained except as required to meet State and Federal requirements, DOE nuclear safety requirements, and surveillances.

Savings achieved in the first quarter of 2013 are shown in Figure 6. These savings may appear less-than-expected, but are actually on track with expectations. WRAP is currently in a dormant condition with no operational systems, equipment, or staffing. Work is in progress to revise requirements for annual updates to the WRAP safety authorization basis to allow the safety basis to be maintained using the Unreviewed Safety Question process. This change, coming later this fiscal year, will increase cost savings to the level planned.

FY13 Budget ($K)	Cost Savings ($K)	Total ($K)	Actual Savings 1st Quarter FY13 ($K)
3024.8	653.6	2371.3	89.3

Fig. 6. Waste Receiving and Processing Facility

Planned Efficiencies

- Remove all the waste from buildings to reduce need for inspection/surveillances and associated records.
- Reduce the size and number of Radioactive Areas/Radioactive Material Areas to reduce surveillance/routines and associated records.
- Maintain safety basis using Unreviewed Safety Question process rather than annual updates.
- Eliminate need for direct staff in the facility.

Impacts to the WRAP Risk Profile are discussed in Table VI.

Table VI. Risk Evaluation for Implementing Efficiencies at WRAP

Previously Known and Accepted Risks	
Project Industrial Accident or Personnel Contamination	
Aging Building Systems/components Problems Impact Operations and Surveillance & Maintenance Activities	
Results of External Audits/Assessments Impact Operations	
Additional Risks Identified	**Discussion**
Lack of breadth and depth of resources	Redistribution and consolidation of resources to allow for resource optimization has reduced the breadth of experienced facility resources.
Response times to emergent items	Emergent items not requiring immediate attention will be prioritized and worked as resources allow, which may mean significant delays in response time and potential inability to support short-turnaround requests.
Reduced capability to respond to significant issues/operational events	Reduced resources, spread over several facilities may not be able to redeploy quickly to respond to issues or events.

Table VI. Risk Evaluation for Implementing Efficiencies at WRAP (concluded)

Potential non-compliances	The opportunity for single-point failures and non-compliances is increased due to reduced resources.
Inability to invest in opportunities for improvement	With fewer resources and reduced operations, there is a limited capability to commit resources to developing opportunities for improvement.

T Plant Complex

FY13 Budget ($K)	Cost Savings ($K)	Total ($K)	Actual Savings 1st Quarter FY13 ($K)
9134.9	1693.7	7441.2	604.5

Fig. 7. T Plant Complex

The T Plant complex (see Figure 7) comprises the 221-T canyon, 2706-T facility and several other support structures that began as a bismuth phosphate separations facility. The complex has had a number of subsequent missions. Currently the 221-T canyon is a decontamination and repair facility. One of the canyon cells is currently for underwater storage of irradiated fuel assemblies from an off-site generator. These assemblies must be removed in order for the facility to receive and treat sludges currently stored at the K West Basin. The most recent activities at 2706-T were to verify, segregate, treat, repackage, and store contact-handled transuranic (TRU) waste drums and boxes. Prohibited items were segregated from the waste and treated. The compliant radioactive and hazardous wastes were packaged and sampled to ensure the containers met state and federal regulations as well as criteria associated with transporting waste to disposal.

Minimum safe operations at the T Plant Complex include maintaining the facility in accordance with DOE requirements, authorization basis documents, State and Federal regulations, the TPA, permit conditions, and acceptance criteria for LLW, MLLW, and TRU waste. Base operations include maintaining the T Plant Complex on a ready-to-serve basis to perform safe, cost-effective, and environmentally compliant inspections, surveillance and maintenance of structures, systems, components, and processes to ensure safe and efficient operations of the facility/area in support of programmatic work including providing preventive and corrective maintenance activities that are needed to maintain operational equipment, operations radiological control, training and procedures, project management, assessments and surveillances, consumables, engineering support, occupational and industrial safety, and material and equipment required to ensure the facility is operational.

Cost savings achieved at T Plant in the first quarter of FY13 have exceeded expectations by approximately $200,000.

Planned Efficiencies

- Defer ramp-up of T Plant to support the Sludge Treatment Project (includes T Plant Canyon construction activities in support of sludge receipt)
- Eliminate Canyon access pending need for defined scope
- Remove 90% of the waste from buildings to reduce need for inspection/surveillances and associated records.
- Reduce the size and number of Radioactive Areas/Radioactive Material Areas to reduce surveillance/routines and associated records.

Impacts to the T Plant Complex Risk Profile are discussed in Table VII.

Table VII. Risk Evaluation for Implementing Efficiencies at T Plant Complex

Previously Known and Accepted Risks	
Project Industrial Accident or Personnel Contamination	
Major Equipment Failure – T Plant	
Aging Building Systems/components Problems Impact Operations and Surveillance & Maintenance Activities	
Results of External Audits/Assessments Impact Operations	
Additional Risks Identified	**Discussion**
Lack of breadth and depth of resources	Redistribution and consolidation of resources to allow for resource optimization has reduced the breadth of experienced facility resources.
Response times to emergent items	Emergent items not requiring immediate attention will be prioritized and worked as resources allow, which may mean significant delays in response time and potential inability to support short-turnaround requests.
Reduced capability to respond to significant issues/operational events	Reduced resources, spread over several facilities may not be able to redeploy quickly to respond to issues or events.
Potential non-compliances	The opportunity for single-point failures and non-compliances is increased due to reduced resources.
Inability to invest in opportunities for improvement	With fewer resources and reduced operations, there is a limited capability to commit resources to developing opportunities for improvement.

Project Management

The largest cost savings will be realized in the area of Project Management. The Project Management scope includes overall project coordination, direction and customer interface to insure the proper conduct of operation for all 200 Area Waste Management activities to ensure safe and compliant operations at WESF, CSB, CWC/LLBG, ETF, the T Plant Complex and WRAP. This includes baseline management activities, strategic planning, procurement services,

construction project administration, and environmental management integration activities. Specific organizational responsibilities include providing project support and management in the following areas:

- Waste Support Services
- Waste Programs
- Transportation Safety
- Safety, Health and Quality
- Nuclear and Criticality Safety
- Matrixed support management and staff to the Program, Human Relations, and Procurement organizations

Cost Savings planned and achieved are shown in Table VIII. As shown in the table, actual savings are of more than $1 million were realized in the first quarter of FY13. It is expected that these same savings will be accomplished through the remainder of the year for an expected actual FY13 cost savings of more than $4 million.

Planned Efficiencies

- Organizational flattening and streamlining to allow for resource optimization across all project management functions.
- Right-sized capabilities for planned scope
- Simplify and optimize acquisition and procurement management within the project
- Enhance integration with pre-selected subcontractors, using corporate reachback to fulfill short-term and one-time needs
- Improve Strategic Planning activities
- Integrate Chemical Management Program across the Program

Table VIII. Project Management Planned and Achieved Cost Savings

FY13 Budget ($K)	Cost Savings ($K)	Total ($K)	Actual Savings 1st Quarter FY13 ($K)
12,424.0	3103.3	9320.7	1006.6

Impacts to the Project Management Risk Profile are discussed in Table IX.

Table IX. Risk Evaluation for Implementing Efficiencies in the Project Management Organization

Previously Known and Accepted Risks	
Project Industrial Accident or Personnel Contamination	
Results of External Audits/Assessments Impact Operations	
Additional Risks Identified	**Discussion**
Lack of breadth and depth of resources	Redistribution and consolidation of resources to allow for resource optimization has reduced the breadth of experienced facility resources.
Response times to emergent items	Emergent items not requiring immediate attention will be prioritized and worked as resources allow, which may mean significant delays in response time and potential inability to support short-turnaround requests.

Table IX. Risk Evaluation for Implementing Efficiencies in the Project Management Organization (concluded)

Reduced capability to respond to significant issues/operational events	Reduced resources, spread over several facilities may not be able to redeploy quickly to respond to issues or events.
Potential non-compliances	The opportunity for single-point failures and non-compliances is increased due to reduced resources.
Inability to invest in opportunities for improvement	With fewer resources and reduced operations, there is a limited capability to commit resources to developing opportunities for improvement.

CONCLUSIONS

In this, and the coming difficult budgetary environment, we will continue to be tasked with identifying more effective ways to maintain the DOE's capabilities, while delivering value for every dollar spent. Finding and implementing cost savings measures is going to become the business of the day for some time to come, and should drive contractors to be more closely aligned with DOE to manage facilities and processes based on DOE priorities.

Of course, for each efficiency identified, there is a corresponding increase in risk, including a potential loss of breadth and depth of available resources; lengthened response time to emergent issues; inability to invest in critical opportunities for improvement (OFIs); potential single-point failures or non-compliances due to resource scarcity; limited cross-training capability; and reduced capability to respond to changes in DOE priorities. It is incumbent on the contracting community to identify, manage, and mitigate these risks through open and concise communication and interaction with DOE that fully supports a partnering approach to managing priorities of those tasks that cannot be adequately funded such that other work scopes can continue. While this represents a very difficult contracting environment within the DOE complex, it is clear that this will continue to be a challenge that will require critical evaluation of work scopes to determine what really is necessary and identify innovative ways to complete that necessary work within budget limitations. Past practices of continuous "what-if" scenario generation, "good and neat ideas," can no longer simply be absorbed into funding as budgetary "cushions" are no longer in place. Both DOE and its contractors must change their appetites for what is truly important and work within available funding profiles to deliver the best value to the public. Such efforts at the Hanford Site are delivering cost savings today on DOE priority work, with significantly reduced resources and funding and minimal increase in risk. These efficiencies have resulted in $2.4 million in cost savings over the first quarter of FY13 and are expected to achieve the targeted cost savings of approximately $9 million for FY13.