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Project Execution Plan for the Central Characterization Project

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0	xx/xx/2010	Initial issue.

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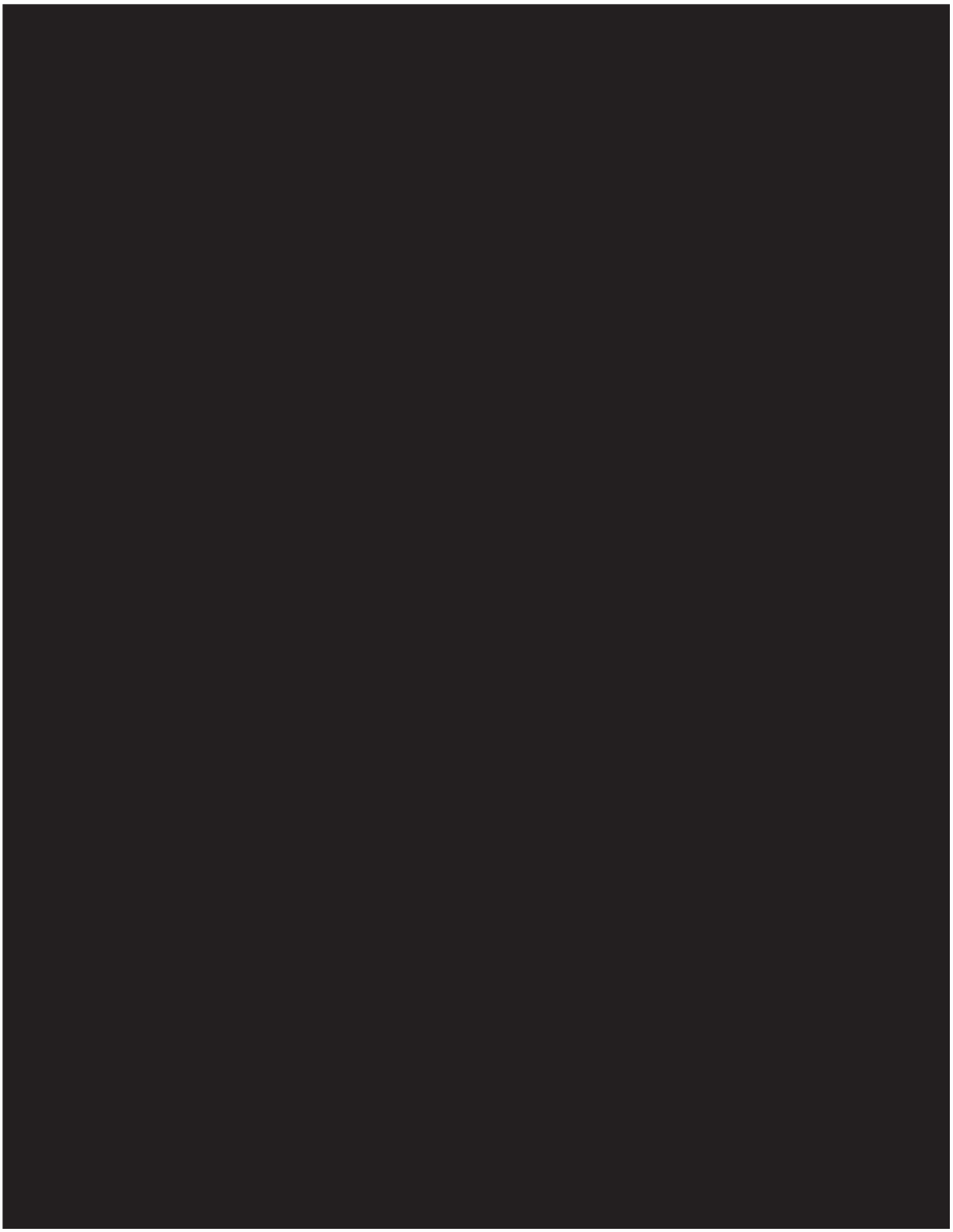
LIST OF ACRONYMS AND ABREVIATIONS

AB	authorization basis
AK	acceptable knowledge
AMWTP	Advanced Mixed Waste Treatment Project
ANL	Argonne National Laboratories
ANL-E	Argonne National Laboratory-East
ANL-W	Argonne National Laboratory-West
APL	acceleration process line
ARP	Accelerated Retrieval Project
ARRA	American Recovery and Reinvestment Act of 2009
B&W-NES	Babcock and Wilcox – NES -
BAPL	Bettis Atomic Power Laboratory
BCL	Battelle Columbus Laboratory
BEA	Battelle Energy Alliance
CBFO	Carlsbad Field Office
CCP	Central Characterization Project
CFR	Code of Federal Regulations
CH	contact-handled
DOE	U.S. Department of Energy
ESH&Q	Environmental, Health, Safety, & Quality
FM	Facility Manager
FY	fiscal year
GEVNC	General Electric Vallecitos Nuclear Center
HENC	High Efficiency Neutron Counter
HSG	headspace gas
INL	Idaho National Laboratory
ISMS	Integrated Safety Management System
KAPL-NFS	Knolls Atamic Power Laboratory – Nuclear Fuel Services
KAPL-NY	Knolls Atomic Power Laboratory – New York
LANL	Los Alamos National Laboratory
LBNL	Lawrence Berkeley National Laboratory
LLNL	Lawrence Livermore National Laboratory
m^3	cubic meter(s)
MOU	Memorandum of Understanding
MOVER	Mobile Visual Examination and Repackaging
MPCC	Multi Purpose Crate Counter
NDA	Nondestructive Assay
NDE	Nondestructive Examination

LIST OF ACRONYMS AND ABREVIATIONS (Continued)

NEPA	National Environmental Protection Act
NRD	NRD, LLC, in Grand Island, New York
NTS	Nevada Test Site
ORNL	Oak Ridge National Laboratory
PGDP	Paducah Gaseous Diffusion Plant
PM	Project Manager
PMB	Performance Measurement Baseline
PNSGS	Passive Neutron Segmented Gamma Scanner
PXP	Project Execution Plan
QA	Quality Assurance
RCT	Retrieval, Characterization, and Transportation
RH	Remote-Handled
SGS	Segmented Gamma Scanner
SNL	Sandia National Laboratories
SOW	Statement of Works
SPM	Site Project Manager
SPRU	Separations Process Research Unit
SQS	Small Quantity Sites
SRS	Savannah River Site
STR	Subcontract Technical Representative
SWB	Standard Waste Box
TGS	Tomographic Scanner
TRU	Transuranic
TWPC	TRU Waste Processing Center
VE	visual examination
WBS	Work Breakdown Structure
WIPP	Waste Isolation Pilot Plant
WTS	Washington TRU Solutions
WVDP	West Valley Demonstration Project
WWIS	WIPP Waste Information System

1.0 PROJECT OVERVIEW



2.0 CONTRACT OVERVIEW

The CCP will characterize and certify CH TRU waste at the following DOE sites:

SRS
ORNL
LANL
Hanford
INL
Small Quantity Sites (SQS)

2.1 Site Information

The scope of work is described below for each WBS Level 3 element, based on funding allocation from CBFO.

2.1.1 Savannah River Site (SRS)

CCP will continue CH-TRU waste characterization and certification at SRS until end of FY-11. CCP will continue to work off approximately 2200 drums that require administrative rework or re-characterization for subsequent shipment to the WIPP.

CCP will also assist SRS with analysis of nuclear and chemical safety hazards of the waste, including AK information and development and maintenance of operational and administrative procedures.

2.1.2 Los Alamos National Laboratory (LANL)

- CH TRU waste

CCP will continue TRU waste characterization and certification at LANL. The FY 09 funding baseline provided by CBFO supports characterization operations.

- RH TRU waste

Sixteen previously packaged 72B canisters of RH debris waste were characterized and certified in FY-09 using existing FY-07 funding.

2.1.3 Hanford

WTS will begin establishing a certified characterization program in FY-09 at Hanford.

2.1.4 Idaho National Laboratory (INL)

CCP established an acceleration process line (APL) in FY 05 to characterize and certify waste from the Pit 4 Accelerated Retrieval Project (ARP) at INL. In addition, the APL included the capability to characterize retrievably-stored legacy drums as well. Personnel and characterization equipment have been characterizing both legacy buried and stored waste since April 2005. The Advanced Mixed Waste Treatment Plant (AMWTP) at INL is also certified to characterize and ship TRU waste to the WIPP.

- CH-TRU Waste

For ARP CH waste, there are approximately 22,000 drums projected to be produced from Pits 4, 5, 6, and 9. Pit 4 is complete as of July 2008. Currently, 14,000 drums have been packaged, 5,500 have been characterized, and 2,973 have been shipped to WIPP. Waste shipping to the WIPP under the certified CCP program began in late-October 2005.

- RH-TRU Waste

Six hundred twenty one drums of RH debris generated at ANL has been characterized, certified, and shipped to the WIPP in FY-07, FY-08, and FY-09.

Twelve more drums of RH debris generated at ANL will be characterized, certified, and shipped to the WIPP in FY-09.

2.1.5 Oak Ridge National Laboratory (ORNL)

- CH-TRU Waste

ORNL currently has an inventory of approximately 2500 containers managed as CH TRU waste. CCP is currently characterizing and certifying CH TRU waste for shipment to WIPP. Additionally, CCP provided data from NDA and NDE that is being used by the TRU Waste Processing Center (TWPC) to microencapsulate the containers identified as Low-Level Mixed Waste, and subsequently ship the macro-encapsulated boxes to NTS for disposal.

- RH-TRU Waste

CCP is characterizing and certifying RH TRU waste, including Dose to Curie, visual examination (VE), and HSG, at the TWPC.

2.2 Small Quantity Sites (SQS)

2.2.1 Argonne National Laboratory (ANL)

Work at ANL is continuing and so far 84 30-gallon drums of RH debris waste have been characterized. Seventy five drums of RH debris waste have been certified and shipped to the WIPP. ANL is also storing approximately 120 55-gallon drums equivalents of RH waste from different streams. The RH waste will be characterized by CCP for transport to the WIPP in FY-09-FY-11.

ANL is storing CH waste in approximately 38 55- gallon drums and other containers of miscellaneous sizes (approximately 236 containers of sizes from 1 liter to 85-gallons). This waste will be characterized by CCP for transport to INL for final characterization and certification in FY-11.

2.2.2 Battelle Energy Alliance/ArgonneNational Laboratory (BEA)/ANL-W

Eighteen 55-gallon drums and 2 SWBs of CH waste, and 234 liners, two bins, seven 45 gallon drums, three canisters overpacking 45-gallon drums, 20 Be reflector blocks, and 55 cylinders of RH waste will be packaged by BEA prior to its transfer to the Idaho Cleanup Project for characterization under the CCP certification program.

2.2.3 Babcock & Wilcox (B&W) – NES

B&W-NES is storing approximately 400 cubic feet of CH waste in two boxes, 20 drums, and 1 strong-tight box.

2.2.4 Bettis Atomic Power Laboratory (BAPL)

Approximately 18.9 cubic meters (m^3) of CH waste (piping) will be packaged into SWBs. BAPL is also storing approximately 49.2 m^3 of RH waste (currently stored in hot cells), 15 high integrity containers, and eight shipping assemblies of RH waste. The waste will be characterized by CCP for transport to a designated consolidation facility for final characterization and certification in FY-10-FY-11.

2.2.5 General Electric Vallecitos Nuclear Center (GEVNC)

RH waste was packaged by GEVNC into 100 55-gallon drums, and CH was packaged into five 55-gallon drums. The CH waste will be characterized by CCP for transport to a designated consolidation facility for final characterization and certification in FY-09. The RH waste will be characterized by CCP for transport to and disposal at WIPP in FY-09.

2.2.6 Knolls Atomic Power Laboratory – New York (KAPL-NY)

Approximately 101 5-gallon cans of RH waste will be characterized by CCP for transport to a designated consolidation facility for final characterization and certification.

2.2.7 Lawrence Livermore National Laboratory (LLNL)

Four hundred fifty 55-gallon drums, 32 large boxes, and nine SWBs of CH waste are expected to be generated; however, it is anticipated that this waste may be low-level waste. If the waste is TRU, the waste will require assay to determine the radiation level (i.e., low-level or TRU waste). The oversized boxes that assay as TRU waste may require repackaging for transportation. The waste will be characterized by CCP for transport to a designated consolidation facility for final characterization and certification in FY-09-FY-10.

2.2.8 Nevada Test Site (NTS)

One hundred four 55-gallon drums of CH waste have been packaged and sent to Idaho. Seventy nine SWBs of CH waste have been packaged and sent to Idaho. The waste will be characterized by CCP for transport to a designated consolidation facility for final characterization and certification. The remaining inventory consists of two spheres (Type V3XA vessels) that were used to conduct contained high explosive tests.

2.2.9 NRD, Inc.

Twenty five 55-gallon drums of CH vitrified waste, 42 55-gallon drums of CH glovebox debris, and two crates of High-Efficiency Particulate Air filter waste (not yet packaged). The waste will be characterized by CCP in FY-10 for transport to a designated consolidation facility for final characterization and certification FY-09-FY-10.

2.2.10 Paducah Gaseous Diffusion Plant (PGDP)

Two 100-gallon drums, three 30-gallon drums, one 55-gallon drum, two 5-gallon cans, and 15 55-gallon drums overpacked in 85-gallon drums of CH waste will be characterized by CCP for transport to a designated consolidation facility for final characterization and certification.

2.2.11 Sandia National Laboratories (SNL)

SNL has repackaged and is storing CH waste in 14 55-gallon drums (5 mixed and 11 non-mixed). SNL plans to repackage CH waste currently stored in the following miscellaneous containers: two 2-gallon containers, nine 5-gallon containers, one ten-gallon

container, one (1) 14-gallon container, one (1) 15-gallon container, one 30-gallon drum, four 55-gallon drums, one 55-gallon drum overpacked in an 85-gallon drum, and one 4- x 4- x 7-foot box. Twenty of these containers contain sources, which will be collected by OSRP. SNL is also storing 29 55-gallon drums and one 55-gallon drum overpacked in an 85-gallon drum containing CH waste generated by the Lovelace Respiratory Research Institute, and three 55-gallon drums of CH waste from the FY06 operation of the joint "Z-pinch" program between LANL and SNL. The CH waste will be characterized by CCP for transport to a designated consolidation facility for final characterization and certification in FY09 - FY10. SNL has repackaged and is storing RH waste in two 30-gallon drums (with internal lever locks). SNL is also currently storing RH waste in two lead pigs, two 55-gallon drums, and nineteen lead-lined casks.

2.2.12 Separations Process Research Unit (SPRU)

SPRU is currently storing waste in the form of tank heels in 7 underground tanks. Cleanup of the underground waste is expected to generate approximately 50 m^3 which is estimated to be CH waste. The waste will require packaging in approved payload containers. The waste will be characterized by CCP for transport to a designated consolidation facility for final characterization and certification.

2.2.13 West Valley Demonstration Project (WVDP)

WVDP is storing 215 55-gallon drums and 21 "miscellaneous" boxes of CH waste, and approximately 1,350 m^3 of CH waste that has not yet been classified or containerized. WVDP is also storing 27 55-gallon drums and 116 miscellaneous boxes of RH waste. Much of the waste requires packaging prior to transport. The waste will be characterized by CCP for transport to a designated consolidation facility for final characterization and certification in FY-09-FY-11.

2.2.14 Lawrence Berkeley National Laboratory (LBNL)

LBNL is storing CH waste in approximately 70 containers of small sizes (20 milliliters to 4 liters in size), which will be packaged into approximately 3 55-gallon drums. This waste will be characterized by CCP for transport to INL for final characterization and certification in FY-10.

2.2.15 Knolls Atomic Power Laboratory-Nuclear Fuel Services (KAPL-NFS)

KAPL-NFS projects the generation of CH waste from the excavation of the soil and concrete remaining from the MOX fuel fabrication facility removal in 2005. This activity is expected to generate approximately 700 drums. This waste will be characterized by CCP for transport to ORNL for final characterization and certification.

2.3 Acceptable Knowledge (AK) Support

Provide AK support for large and small quantity sites as directed by CCP including supporting the CBFO document review program.

2.4 ARRA Implementation

Details on implementation instructions for ARRA are not finalized and will be forthcoming. Discrepancies between ARRA and current contract requirements will be referred to the CBFO Contracting Officer for reconciliation. ARRA work is to be performed concurrent with the existing ongoing contract with the DOE.

All work funded by the ARRA must be completed by September 30, 2011.

Figure 1. Carlsbad Field Office Work Breakdown Structure and Recovery Act Project WBS Detail

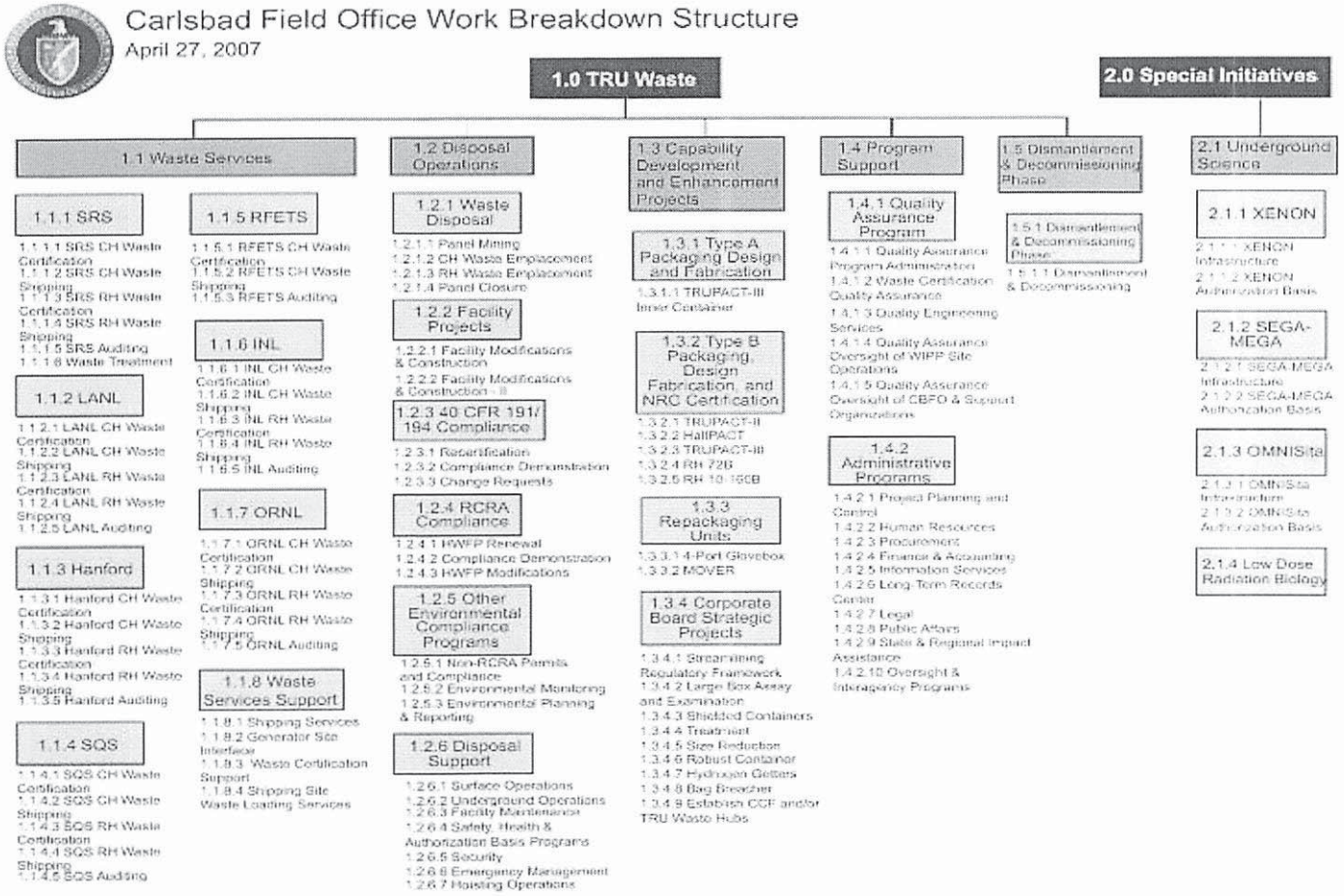
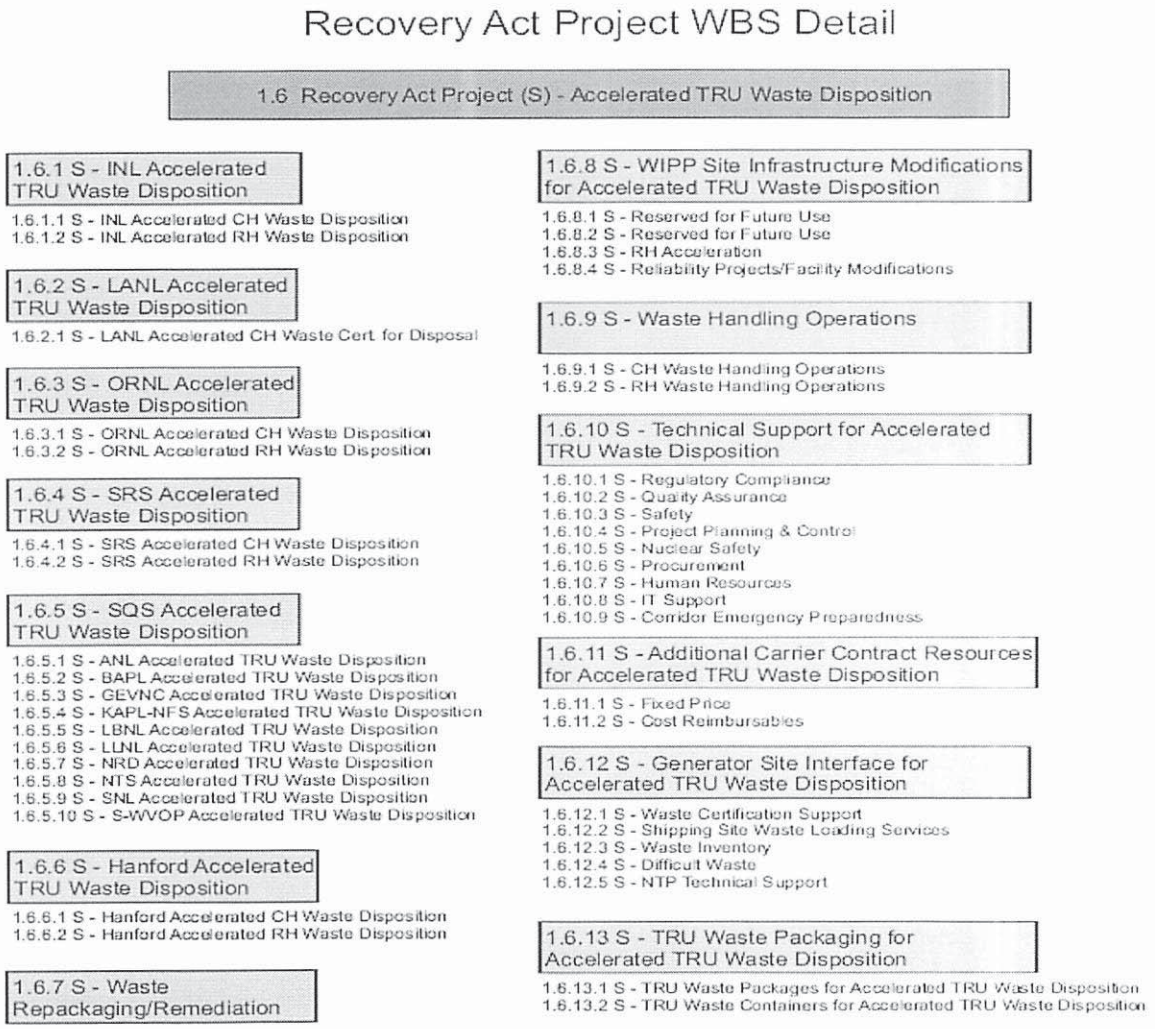


Figure 1. Carlsbad Field Office Work Breakdown Structure and Recovery Act Project WBS Detail (Continued)



3.0 PROJECT ORGANIZATION

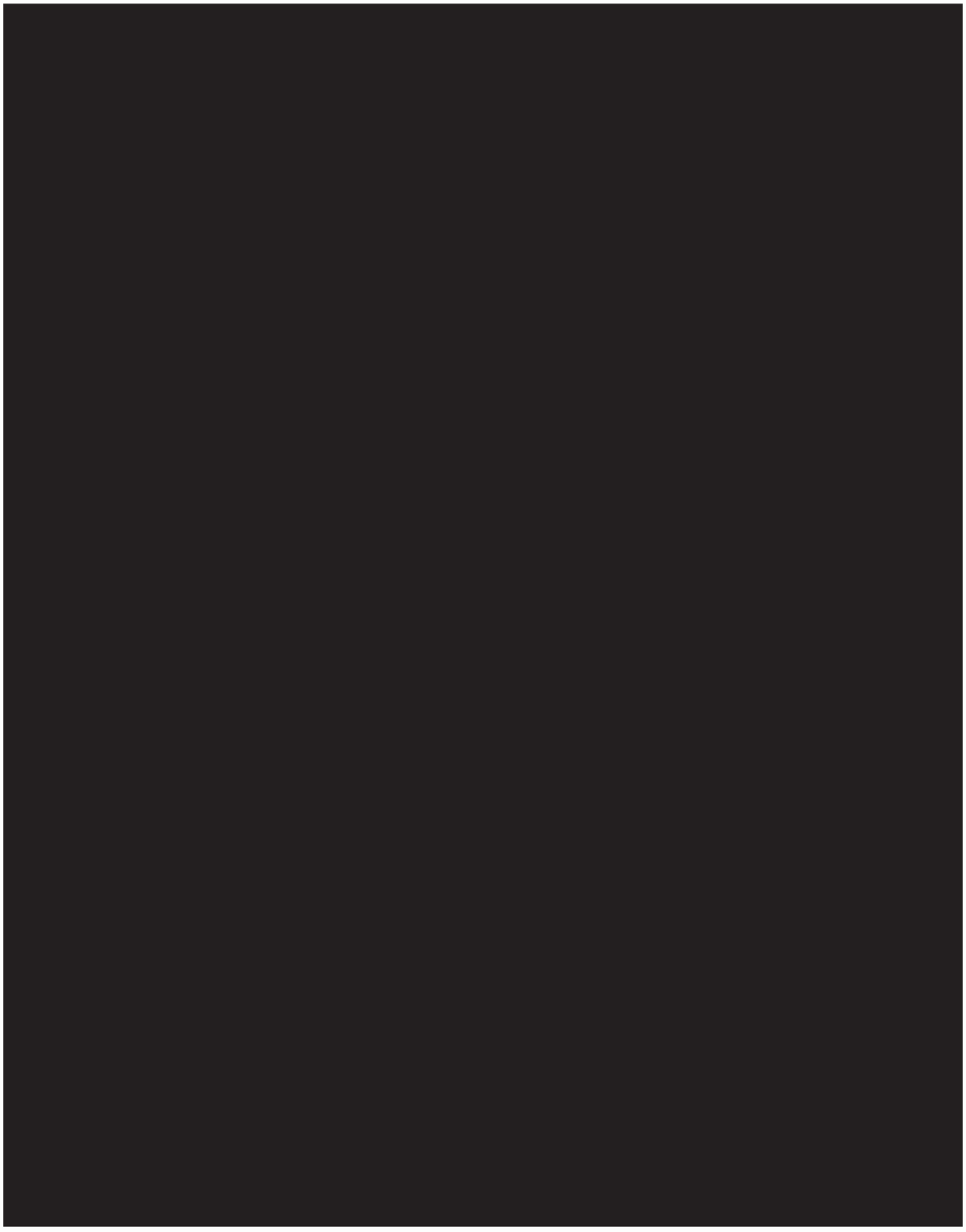


Figure 2. RCT Organizations

4.0 PROJECT ADMINISTRATION

It is CCP's responsibility to ensure that the activities of each of the primary and lower-tier subcontractors efficiently result in the timely completion of project activities, while ensuring that the site remains in compliance with the wide array of safety, environmental, security, labor, and contract requirements. Figure 3, WIPP Characterization Flow Chart, provides a flow chart illustrating all of the major activities required to establish a characterization process at a Host site. CCP integrates these activities through the following key activities:

- Preparation of plans, which examine various project cost and schedule improvements as well as impact due to changing technical requirements
- Preparation of project baselines and direction of the work planning needed to implement such plans
- Management of cross-cutting activities, such as Environmental, Safety, Health, and Quality (ESH&Q) disciplines by development of the project requirements, establishment and tracking of program metrics, audits and assessments, and management reporting
- Direct management of the subcontractors
- Daily and weekly production discussions, integration and operations meetings that track project progress, identify and resolve issues. Ad hoc teams are established, as needed, to address problem areas such as characterization capacity, resource allocation, and shipping logistics

Figure 3. WIPP Characterization Flow Chart

5.0 BUDGET AND SCHEDULES

5.1 Budget

Table 1, CCP FY-09 Summary Budget, provides the budget funding for all baseline activities and ARRA activities planned in FY-09. Baseline funding represents approved funding by CBFO and other DOE sites, excluding prior-year carryover and approved Baseline Change Requests to maintain project scope and schedules. Detailed ARRA budgets have been developed for individual projects and approved by the ARRA PM.

Cost estimates supporting this budget include funding for the major work elements and/or capital equipment. The required total annual funding by project is included in Project-Specific Activity Based Cost Sheets submitted to CBFO.

Table 1. CCP FY-09 Summary Budget

Cost Account	Site Characterization	Carry Over	FY 09 Baseline	FY09 Stimulus
S1640101	SRS CH			
W1110111	SRS CH (see Note)			
S1640201	SRS RH			
W1110323	SRS RH (Battelle)			
S1620101	LANL			
W1120111	LANL			
S1660101	Hanford			
W1160103	INL Trans			
W1160104	INL Chara			
S1650302	GEVNC (RH)			
S1650102	ANL-RH			
W1140315	ANL-RH			
W1140111	AK			
W1170101	Oak Ridge (CH)			
W1170302	Oak Ridge (RH)			
S1610102	GEVNC (CH)			
W1140123	GEVNC(INL)			
S1610102	NTS(CH)			
W1140122	SQS (NTS,SNL,LLNL)			
S1630101	Oak Ridge			
S1650601	LLNL (CH)			

Table 1. CCP FY 09 Summary Budget (Continued)

Cost Account	Site Characterization	Carry Over	FY 09 Baseline	FY09 Stimulus
S1650801	NTS (CH)			[redacted]
S1650901	SNL (CH)			[redacted]
S1670101	Waste Repackaging			[redacted]
V1140121	GEVNC		[redacted]	
Z1120115	LANL Base		[redacted]	
Z1120117	LANL M&S		[redacted]	
Legacy	INL		[redacted]	
Buried	INL		[redacted]	
BBWIBBWI	INL		[redacted]	
ID HFEF	INL		[redacted]	
ID NRFSPC	INL		[redacted]	
ID REMOTE	INL		[redacted]	
S16120201	RH MLU			[redacted]

Note: Baseline amount for SRS (CH) to be adjusted for Stimulus Funding received.

6.0 PROJECT RESOURCES

CCP is comprised of approximately [redacted] WTS employees, [redacted] WTS-matrixed employees, and [redacted] subcontracted technical personnel. Another 50 vendor personnel operate the leased mobile characterization systems at the various DOE sites. Additional personnel may be added based on the characterization activities and technical requirements at each Host site.

CCP is organized by characterization project, with a project manager assigned to each project at the active Host site, to ensure effective project management of all characterization activities. CCP also maintains a Project Certification organization to perform certified data entry into the WIPP Waste Information System (WWIS) and final waste certification. Project Certification contains the waste certification officials for certifying all waste characterized and shipped by CCP.

CCP will provide, organize, and manage the resources necessary to complete the scope of work presented in the DOE Project Description for the ARRA.

7.0 UNIQUE PROJECT CONSIDERATIONS

7.1 Host Site Relations

CCP will implement and utilize specific communication processes and methods to maintain effective and productive relations with the DOE Host sites. The methods include: 1) Integrated planning and agreement with the Host sites; 2) Formal and documented communications (i.e., Statement of Works [SOWs]), Memorandum of Understanding [MOU's], site interface documents) to ensure full understanding of the work scope; 3) Routine progress update and issues notification; 4) A team approach to work accomplishment and problem solving. It is important that all team members, including DOE, integrating contractors, and subcontractors, communicate effectively and maintain a business-like approach to managing performance.

The CCP will accomplish its mission following accepted project management policies and procedures, including the development and execution of this RCT PXP. Integration activities include coordination with other DOE sites, external agencies, and the public stakeholders. Internal project integration throughout CCP and WTS is also required. Once identified, the initial project team will contact and coordinate with the Host site. This coordination will include site planning, information and resource exchange, and preparation of contractual and interface documents to formally identify roles and responsibilities, funding, and agency

agreements. In general, the primary focus will be on effective information exchange through formal correspondence.

7.2 Strategic Challenges

There are numerous strategic challenges that need to be overcome to meet or exceed the CCP objectives in FY-09. Key strategies to improve CCP implementation include:

- Implementing sound project management techniques for CCP
- Incorporating Lessons-Learned from past CCP implementation

These strategies for full implementation in FY-09 are addressed below.

7.2.1 Project Execution Plan (PXP) Implementation

This PXP will be issued and controlled for the CCP. This plan describes the plans and objectives for FY-09 and establishes a structure for conducting work processes within the CCP. This structure includes the following:

- Establishment of baseline Project Schedules for each site, under change control within the CCP
- Establishment of baseline cost estimates, personnel/ resources, and budgets for each site under change control within the CCP
- Utilizing the WTS earned value management system for Management progress tracking and reporting
- Establishment of Configuration Control for project characterization equipment
- Utilizing the WIPP Issues Management system for action tracking and completion
- Development of concise, standardized, informational briefings for interested parties
- Performing monthly project reviews for all sites utilizing the WTS Project Management reporting system

7.2.2 Lessons Learned Implementation

Lessons learned from characterization work at the current active sites are a tremendous resource for improving the CCP implementation at other sites. Many of these lessons have already been incorporated into the next generation of planning for deployment at future sites. The following examples of lessons learned information have been documented to date:

- Establish AB and procedures before mobilization of equipment to the Host site
- Utilize standardized equipment and procedures to the maximum extent possible
- Optimize scheduling of external audits to ensure effective corrective actions and management oversight
- Implement sound project management practices and configuration control
- Incentivize employees and subcontractors toward the same goals
- Evaluate the appropriate timing for mobilization at each Host site
- Confirm readiness review decisions before deployment of CCP resources.

Lessons learned will be discussed and assigned for implementation throughout CCP as appropriate.

8.0 ENGINEERING AND DESIGN

CCP will utilize RCT Engineering for any engineering functions as required. Existing, Government-furnished equipment is maintained and operated by CCP project personnel at the DOE Host site. Formal configuration management of all Government Furnished Services and Information equipment is documented and controlled per CCP-CM-001, *Equipment Change Authorization and Documentation*.

9.0 PROCUREMENT AND MATERIALS MANAGEMENT

CCP subcontracts a significant amount of the characterization work to vendors who own and operate the equipment at each Host site. In addition, numerous other subcontractors provide a wide array of services to support CCP, ranging from construction, laboratory analyses, and supplies.

It is CCP's responsibility to develop and implement an overall subcontracting strategy that provides best-in-class companies delivering project completion at the most advantageous price. Key elements of this subcontracting strategy are to:

- Assign overlapping scopes of work among the subcontractors to ensure sufficient management, technical, and resource capabilities across the site and to foster a competitive contracting environment where high-performing subcontractors are rewarded with additional tasks as the project progresses
- Review each major subcontractor annually to determine whether contract options should be exercised. A make-buy analysis shall be performed
- Increase the number of fixed-price and project-specific subcontracts as project activities become better defined and more predictable
- Increase or decrease the volume of work assigned to specific subcontractors based on their performance and on the natural evolution of project activities
- Continue to seek specialty subcontractors that can provide a service or technology to expedite cost-effective project completion
- Incentivize subcontractors to provide high-quality, best-cost results, while accelerating the project schedules.

10.0 PROJECT CONTROL

The project control system seeks to be responsive to internal management requirements and provide the WIPP participants with increased cost and schedule performance visibility of the accomplishment of project objectives. In addition to providing a formal integrated schedule and resource plan, the management control system provides analysis of planned versus actual performance and early detection or prediction of problems that require management attention.

In summary, the WIPP Project Control System provides for:

- Organization: Contractual efforts are established and responsibilities assigned for the work.
- Planning and Budgeting: Work is formally planned, scheduled, budgeted, and authorized.
- Accounting: Costs of work and material are accumulated.
- Analysis: Planned and actual performance is compared and variances analyzed.
- Revisions and Access to Data: Estimates of final costs are developed along with methods to incorporate baseline changes in these estimates.
- Risk Management: Describes the WIPP risk identification, assessment, mitigation, and monitoring process.

The CBFO Baseline is actually comprised of three baselines that integrate the schedule, cost, and performance measures for the site. These baselines are as follows:

- Schedule Baseline: The Integrated Project Schedule is the primary controlled schedule from which schedule performance is measured. It is used to status and update summary level schedules. Only changes authorized through the Baseline Change Control process are incorporated into the schedule baseline.
- Cost Baseline: Contract funding levels, contained in the fiscal year program guidance letter from CBFO plus approved changes, are allocated to Cost Account Plans, developed at Level 5 of the WBS, to form the cost baseline.
- Performance Measurement Baseline: The Performance Measurement Baseline (PMB) is the time phased budget plan against which cost and schedule performance are measured. The resource loaded schedule activities contained in the Complex Wide Integration Tool form the basis of the PMB.

The elements comprising project performance include schedule and cost performance and analysis and, performance measures outlined in Performance Incentive CBFO-SQS-1-AL-66444 TRU Waste Certification.

On a project of this scale, with its technical complexities and uncertain conditions, changes are inevitable. The magnitude and range of unknowns, as well as potentially changing regulatory requirements, necessitate identifying, implementing, and managing changes effectively. Cost and schedule baselines are generally controlled by the CBFO-95-1122, Carlsbad Field Office Baseline Change Control Process.

This PXP addresses the CCP scope, schedule, and budget for FY-09. Formal processes are established and documented in this PXP for communications, configuration control, and issues management. The PXP will be controlled by CCP to ensure that revisions are processed and approved by appropriate parties; that distribution is maintained, and that associated changes are maintained for record purposes.

WIPP currently uses a WBS to define all authorized work at the appropriate level needed for management oversight and control. In order to comply with planning and reporting requirements for projects associated with the ARRA, a new Level 2 WBS element (1.6) with subordinate levels of detail has been added to the existing project WBS. To further ensure transparency and accountability of ARRA funds, descriptions of WBS elements within the 1.6 hierarchy will begin with the letter "S."

To define clear lines of responsibility and accountability for accomplishment of the work scope, a responsible individual for each organization has been assigned to each WBS Level 3 element.

11.0 PROJECT QUALITY PLAN

The requirements driving QA programs are specified in federal and state regulations, orders, agreements, licenses, and waste shipping and acceptance criteria. QA program requirements affect every aspect of the project and emphasize planning, implementing, reporting, assessing, and improving, to ensure processes, items, or services meet the expectations of CCP customers.

The QA Program is a performance based program designed to ensure that the 10 criteria of the Title10 of the Code of Federal Regulations (CFR), Part 830, *Nuclear Safety Management*, Subpart A Quality Assurance Requirements (Rule); (10 CFR 830.120), and the DOE Order 414.1, Quality Assurance, are met. The Rule applies to activities with the potential to cause radiological harm, while the Order applies to all other site activities. To meet these requirements, there is a QA Program for the site.

QA is a shared interdisciplinary function and responsibility. It involves management and individual contributions from all organizations responsible to produce items, perform activities, and independently verify that items and

activities comply with specific requirements. Managers are responsible for knowing what requirements and standards to follow, and for determining what criteria apply to the specific activities. Others demonstrate their responsibility by following procedures and notifying the appropriate supervision with actual or potential problems and helping to resolve these problems with approved corrective actions. All employees are responsible for complying with quality requirements. In a projectized organization, it is imperative that QA personnel support the goals of the project and still maintain an independence that will help ensure appropriately implemented QA program requirements. Within the CCP projects, QA personnel are specifically trained to assess work quality on a particular project.

12.0 CONSTRUCTION

CCP performs no construction functions or activities.

13.0 COMMISSIONING AND STARTUP

Following the decision to deploy the characterization equipment to a Host site, the equipment must be prepared for mobilization and transported to the Host site in an efficient and cost effective manner. Demobilization, mobilization, and startup require extensive managerial coordination and logistical support both from within the Project Office and the Host site. Proper packaging and preparation of equipment are required to prevent damage and to ensure the characterization processes can be set up and calibrated in a timely manner at the Host site. Key logistical functions include the following:

- Provide funding and up-front team support to the project
- Develop and administer mobile vendor subcontracts
- Develop and administer the subcontracts for development and maintenance of AK information
- Develop and coordinate the review and approval of contractual and interface documents with the Host site to ensure clear roles, responsibilities and communication leads
- Identify all site requirements for mobilization, equipment set up, calibration and startup, readiness for operation, full operations, and demobilization
- Prepare, maintain, and update a detailed project plan, including implementation tasks and schedules
- Manage and implement the mobilization and startup plan.

A list of available characterization equipment is shown in Attachment 2.

14.0 ENVIRONMENTAL, SAFETY, AND HEALTH

Achieving successful project completion in FY-09 demands accelerating the full integration of safe work performance; effective safeguards and security, environmental stewardship, and quality into the management and performance of project work. CCP's primary objective is to deliver the project work scope with a best-in-class safety record. The successful integration of these compliance elements is vital for successful project completion.

Protecting the employees, the public, and the environment, while safeguarding the nuclear waste material, are key responsibilities that form the basis of operations. To help ensure project performance and compliance, standardized training of personnel in their specific project requirements and responsibilities is required.

14.1 Integrated Safety Management System

The DOE Integrated Safety Management System (ISMS) is an integrated approach to ensure that work is planned, analyzed, reviewed, approved, and executed in a safe manner, and that safety is continuously improved through worker feedback. Five core functions of ISMS form the basis for working safety: 1) Define the scope of work, 2) Identify and analyze the hazards, 3) Identify and implement controls, 4) Perform the work, 5) Provide feedback throughout the process.

Characterization activities are fully detailed and implemented via CCP procedures. These procedures were developed using ISMS principles.

All non-characterization activities are controlled by Host site procedures and site work controls. These controls were also developed using ISMS principles.

In addition, the project has an active lessons learned program to capitalize on experience gained from each activity, and to continually improve safety performance.

14.2 Environmental Compliance

CCP will comply with governing regulations, agreements, and orders under the contract applicable to each Host site. The specific criteria for each site is defined in contractual documents SOWs and interface agreements between CCP and the Host site. At a minimum, project activities have, and will continue to be, evaluated for consistency with the Resource Conservation and Recovery Act, and compliance with applicable water, air, waste, and natural resources requirements. The National Environmental Protection Act (NEPA) values and requirements will be met through existing or separate decision making processes.

15.0 RISK MANAGEMENT PLAN

CCP managers involved in project execution, participate in the identification and assessment of program risks. They review program documents, evaluate lessons learned, and use brainstorming and their own experience to identify risks. Project risks are identified in the following areas:

- Cost and Schedule
- Technical
- Programmatic (Obtaining and utilizing resources outside the control of the program manager)
- Support
- Safety
- Regulatory/Permitting
- Site specific (Including alternative site locations)

Once risks are identified, CCP categorizes the identified risks by probability and severity (consequences) of each event as outlined below:

Risk Event Probability

1. Very Unlikely: The risk event is very unlikely to occur in the life of the project. If the project is executed 100 times, it would not be expected to occur once.

2. Unlikely: The risk event might occur once if the project is executed10 times, but is unlikely to occur during the project.

3. Possible: The risk event could occur once during the project.

4. Likely: The risk event is likely to occur at least once during the project. More often than not, on a similar project, it will occur.

5. Very Likely: The risk event is very likely to occur at least once, and probably will occur multiple times. It is likely that it will occur during the life of the project.

Risk Event Severity

1. Very Low: Safety, cost, and schedule impact would be insignificant, very little impact on scope and quality issues would be noticeable.

2. Low: Safety, cost, and/or schedule impact would be less than 5 percent (total project). Scope would be affected in only minor areas, or the quality impact would be noticeable in only the most demanding applications.

3. Moderate: Safety, cost, and/or schedule impacts would be in the 5 percent to10 percent range (total project). Major areas of scope would be affected, or quality reductions would require owner/client approval.

4. High: Safety, cost, and/or schedule impacts would be in the 10 percent to 20 percent range. Scope impacts and/or quality impacts would be unacceptable to the Owner/Client.

5. Very High: Safety, cost, and/or schedule impacts would be greater than 20% or the project deliverable is effectively useless or unusable.

After risks have been identified and categorized, a risk management approach and mitigation actions are developed for each high and moderate risk. For low risk elements not judged to require documented mitigation actions, CCP Managers assure that they are controlled through the normal management functions and work processes. All high and medium risks and mitigation actions are identified in the CBFO Risk Management Plan, which is updated annually.

In order to determine the effectiveness of the Risk Management Plan, the areas of Moderate and High risks are monitored and statused during monthly program meetings with CBFO. In addition, periodic reassessments of programs are performed to determine if new areas of risk need to be identified and assessed.

The CCP Risk Mitigation Matrix is provided in Attachment 3.

16.0 PROJECT CLOSE-OUT

RCT are expected to continue beyond 2013, providing characterization and shipping services throughout the DOE Complex. No closeout activities are planned at this time.

17.0 PROJECT PROCEDURES

The Document Control and Records organization under RCT provides full-time, subcontracted document services to CCP. These services include completing Site interface agreements, program documents, Quality and Technical Procedures, SOWs, Electronic Forms, and participation in CCP audits.

The Document Services Support Team performs document control, and technical and operating support for the CCP. The support team provides support by creating, modifying, and controlling documents and electronic forms in accordance with applicable requirements. Support includes:

- Coordinating reviews for documents
- Maintaining a hard copy/master file of active controlled documents, including review and approval records
- Maintaining the Electronic Document Management System. The system provides electronic review, approval, and distribution of controlled documents
- Supporting audits, assessments, surveillances, and reviews as required by WTS.

CCP Records provides records management and support services to the CCP. The CCP Central Records Center is currently located at the Skeen Whitlock Building in Carlsbad, New Mexico. All records generated during the characterization processes are transmitted and maintained at the Records Center. CCP Central Records Center personnel act as records custodians in support of all generator facilities. Records Inventory & Disposition Schedules are created and maintained annually for the CCP Project Office and all generator facilities performing characterization operations. Records functions include: 1) Record receipt, acknowledgment, and maintenance; 2) Records scanning, tracking, and retrieval; 3) Audit, assessment, and surveillance support; 4) Tracking and coordinating site-specific records training.

In addition, CCP Records maintains records custodians at remote generator facilities. These individuals support the in-process and/or completed records at each facility for transmittal to the CCP Records Center.

Training qualification cards are maintained by the training group under CCP Support.

The CCP Site Project Manager (SPM) functions as the primary interface and point of contact between the CCP and the Host site. The SPM reports to the CCP PM. Figure 2 illustrates a typical CCP organization at a Host site. Key CCP responsible positions include the PM, SPM, and CCP QA. Key Host site positions include the Facility Manager (FM), Subcontract Technical Representative (STR), First Line Supervisor(s), Project Manager(s) (PM), and Facility Safety Representative. However, direction and communications to Host site personnel should normally be through the FM or STR to maintain proper chain of command.

The normal lines of communications between the various positions are shown in Table 2, CCP Communication Between Host Sites. In order to instill effective and consistent communications, these position interfaces should be adhered to on a routine basis. Group meetings and conference calls with the appropriate personnel are also encouraged to ensure efficiency and productivity. However, important decisions shall be documented and distributed to affected personnel to maintain formal conduct of operations in communications.

Table 2. CCP Communication Between Host Sites

CCP Position	Host Site Position	Frequency
PM	Facility Manager	Weekly
SPM/VPM/PM	STR, PM	Daily
QA Engineer	Site QA	Daily

Attachment 1 – TRU Generator Sites

Small Quantity Sites (SQS)

1. Argonne National Laboratory - ANL (Argonne, IL)
2. Battelle Energy Alliance/Argonne National Laboratory-West - ANL-W (Idaho Falls, ID)
3. Bettis Atomic Power Laboratory - BAPL (West Mifflin, PA)
4. Babcock and Wilcox - NES - B&W-NES (Lynchburg, VA)
5. General Electric - Vallecitos Nuclear Center - GEVNC (Sunol, CA)
6. Knolls Atomic Power Laboratory - KAPL - NFS (Erwin, TN)
7. Lawrence Berkeley National Laboratory - LBNL (Berkeley, CA)
8. Lawrence Livermore National Laboratory - LLNL (Livermore, CA)
9. Nevada Test Site - NTS (Mercury, NV)
10. Paducah Gaseous Diffusion Plant - PGDP (Paducah, KY)
11. Sandia National Laboratories - NM - SNL-NM (Albuquerque, NM)
12. Separations Process Research Unit - SPRU (Schenectady, NY)
13. West Valley Demonstration Project - WVDP (West Valley, NY)
14. NRD, Inc. (Grand Island, NY)
15. KAPL-NY (Niskayuna, NY)

Large Quantity Sites (LQS)

1. Hanford (Richland, WA)
2. Idaho National Laboratory - INL (Idaho Falls, ID)
3. Los Alamos National Laboratory - LANL (Los Alamos, NM)
4. Savannah River Site - SRS (Aiken, SC)
5. Oak Ridge National Laboratory - ORNL (Oak Ridge, TN) – RH only

Possible Future Hub Sites

1. Hanford (Richland, WA)
2. Los Alamos National Laboratory -LANL (Los Alamos, NM)
3. Savannah River Site - SRS (Aiken, SC)
4. Idaho National Laboratory
5. Waste Isolation Pilot Plant (WIPP)
6. Oak Ridge National Laboratory - ORNL (Oak Ridge, TN) – RH only

Attachment 2 – CCP Characterization Equipment

Site Location	Characterization Project Equipment	Owner
Savannah River Site (SRS)	RTR-15 (NDE-RTR-15)	SRS
	Segmented Gamma Scanner (SGS), (NDA-SGS-01)	Mobile Characterization Services (MCS)
	ISOCS, (NDA-ISOCS-01) (For screening only)	MCS
	Transportation only HSG, (HSG-FGA-03)	SRS
	Visual Examination (VE) F-area (Non-operational)	CCP
	VE – MRS (Non-operational)	SRS
	VE – TVEF (Non-operational)	SRS
	Vent and Purge	SRS
	Nondestructive Assay Box Counter (NABC)	SRS
	Large box NDE (Startup & Turnover)	SRS
	RTR-4 (NDE RTR-4)	SRS
		MCS
Los Alamos National Laboratory (LANL)	MCS RTR #3, LANL designation RTR-2, (NED-RTR-03)	MCS
	Fast Scan RTR-1	LANL
	High Efficiency Neutron Counter (HENC) (NDA-HENC-01)	MCS
	HENC2, (NDA-HENC-02)	LANL
	Transportation only HSG, (HSG-FGA-02)	CCP
	VE WCRR (Waste Characterization Reduction and Repackaging)	LANL
	Mobile Visual Examination and Repackaging (MOVER) gloveboxPTGS/FRAM1	CCP
	PERMACON	LANL
		LANL
Argonne National Laboratory (ANL)	RH Assay Turn Table, (RH-DTC-RHAT-01)	CCP

Attachment 2. CCP Characterization Equipment (Continued)

Site Location	Characterization Project Equipment	Owner
Idaho National Laboratory (INL)	RTR #5, (NDE-RTR-05) HENC, (NDA-HENC-03) Tomographic Scanner (TGS), (NDA-TGS-01) SuperHENC, (NDA-SHENC-01) Transportation only HSG, (HSG-FGA-01) Gas Generation Testing HSG SUMMA Fast Scan RTR in building 610, (NDE-RTR-610) WAGS, (NDA-WAGS-01) SGRS, (NDA-SGRS-01) VE ARP VE	MCS CCP CCP CCP CCP NFT CCP INL INL INL INL
Available or unassigned equipment	RTR #2, (NDE-RTR-02) Passive Neutron Segmented Gamma Scanner (PNSGS), IPAN/GEA, (NDA-IPAN-GEA-01) SGS, IPAN/PADC, (NDA-IPAN-PADC-01) Multi Purpose Crate Counter, (NDA-MPCC-01) Mobile Loading Units (MLU), MLU-01, MLU-02, MLU-03 RH Moblie Loading Units (RH-MLU), RH-MLU-01, RH-MLU-02	MCS MCS MCS CCP CCP CCP CCP

Attachment 3 – Risk Mitigation Matrix

Risk	Probability	Severity (Consequences)	Mitigation Actions
Cost and Schedule			
Adequate budget/funding is not available to perform as required.	Possible	Moderate	Participation in the National TRU Waste Corporate Board. Integration/coordination of CCP budget with generator sites budgets and plans. Budget planning integrated and supported by CBFO. Process BCR to address new workscope.
Budget estimate was inaccurate.	Unlikely	Low	Adequate review of budget estimates by CCP Managers.

Attachment 3 – Risk Mitigation Matrix (Continued)

Risk	Probability	Severity (Consequences)	Mitigation Actions
Technical			
Wastes do not match the AK information with respect to waste volume, type, and content.	Likely	Moderate	Maintaining reviews of batch data reports. Fast-scanning using RTR and NDA to identify un-certifiable wastes.
Wastes do not meet WAC criteria for transportation and disposal.	Likely	Moderate	Waste repackaging and waste remediation to remove prohibited items.
Programmatic			
Host sites do not provide adequate feed stock.	Very Likely	High	Forward planning and preparation of AK and Waste Stream Profile Forms. Project compliance with project procedures, site ESH&Q requirements, and AB. Daily and weekly project integration meeting with site managers and personnel.

Attachment 3 – Risk Mitigation Matrix (Continued)

Risk	Probability	Severity (Consequences)	Mitigation Actions
Support			
Internal systems are insufficient to meet site needs (WWIS, training, certification personnel, etc.)	Possible	Low	Weekly CCP project integration meeting. Integration of CCP budgets by CCP Financial Management Section. Annual reviews and updates to CCP PXP. Annual reviews and updates to CCP procedures. Maintenance of CCP training logs and requirements.

Attachment 3 – Risk Mitigation Matrix (Continued)

Risk	Probability	Severity (Consequences)	Mitigation Actions
Safety			
Injury or radiation expose to WTS or subcontractor personnel.	Possible	High	Daily safety and pre-evolution meetings with project personnel. Weekly tool box meetings and lessons learned reviews. Maintaining current personnel training and qualifications. Maintaining standardized procedures. Conducting management reviews, project surveillances, and independent QA assessments.
Regulatory/Permitting			
Violation of certification due to equipment or calibration failures.	Unlikely	High	Maintaining standardized procedures.
Failure to comply with permit requirements due to operator errors, (ie, liquid in drums, prohibited items, etc.)	Possible	High	Conducting management reviews, project surveillances, and independent QA assessments. Annual external audits.

Attachment 3 – Risk Mitigation Matrix (Continued)

Risk	Probability	Severity (Consequences)	Mitigation Actions
Site Specific			
SRS – Host site AB non-compliance or safety related incidents that impact site operations thereby impacting Host site ability to provide waste containers to CCP and/or preventing CCP operations.	Very likely	Moderate	Host site training and procedures. Host site safety and pre-evolution meetings. Host site management reviews project surveillances, and independent QA assessments.
Oakridge – Lack of encompassing AB to allow acceptance and treatment of waste with the WIPP disposal prohibited items/conditions and inventory limiting Material at Risk and fissile quantities in the Process Building.	Likely	Moderate	Communications and planning with Host site management to ensure that AB encompasses authorization for the treatment of prohibited items/conditions found on the Oak Ridge waste.

Attachment 3 – Risk Mitigation Matrix (Continued)

Risk	Probability	Severity (Consequences)	Mitigation Actions
Difficulty in characterizing the radiological constituents expected in the Oak Ridge waste.	Very Likely	Moderate	Continue to review data developed by NDA screening and AK to refine the isotopic distributions for the Oak Ridge waste. Supplement the existing CCP NDA capability at Oak Ridge with a multi-detector gamma system capable of attaining low MDAs and better isotopic identification.
Lack of sufficient storage capacity for CH and RH waste.	Very Likely	High	Communications with Host site management to ensure that action continues on the proposed building of an additional storage facility at the TRU Waste Processing Center allowing for a consistent and higher throughput in the characterization process.

Attachment 3 – Risk Mitigation Matrix (Continued)

Risk	Probability	Severity (Consequences)	Mitigation Actions
SQS – Lack of appropriate AB and hazard analysis to support CCP operations for characterization and/or transfer of wastes to the WIPP or other DOE site.	Possible	Moderate	Communications and planning with the SQS management to ensure appropriate site programs and safety documentation are implemented.
Lack of NEPA to implement HUB concept.	Very likely	Low	Supplemental SQS AB analysis and approvals with the Nat'l Basis of Interim Operations to implement clean-up actions.