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Project Plans for Transuranic Waste at Small Quantity Sites in the Department of Energy
Complex-10522

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ABSTRACT

Los Alamos National Laboratory, Carlsbad Office (LANL-CO), has been tasked to write Project Plans for all of the Small Quantity Sites (SQS) with defense related Transuranic (TRU) waste in the Department of Energy (DOE) complex. Transuranic Work-Off Plans were precursors to the Project Plans. LANL-CO prepared a Work-Off Plan for each small quantity site. The Work-Off Plan that identified issues, drivers, schedules, and inventory. Eight sites have been chosen to de-inventory their legacy TRU waste; Bettis Atomic Power Laboratory, General Electric-Vallecitos Nuclear Center, Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory- Area 300, Nevada Test Site, Nuclear Radiation Development, Sandia National Laboratory, and the Separations Process Research Unit. Each plan was written for contact and/or remote handled waste if present at the site. These project plans will assist the small quantity sites to ship legacy TRU waste offsite and de-inventory the site of legacy TRU waste. The DOE is working very diligently to reduce the nuclear foot print in the United States.

Each of the eight SQSs will be de-inventoried of legacy TRU waste during a campaign that ends September 2011. The small quantity sites have a fraction of the waste that large quantity sites possess. During this campaign, the small quantity sites will package all of the legacy TRU waste and ship to Idaho or directly to the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico. The sites will then be removed from the Transuranic Waste Inventory if they are de-inventoried of all waste.

Each Project Plan includes the respective site inventory report, schedules, resources, drivers and any issues. These project plans have been written by the difficult waste team and will be approved by each site. Team members have been assigned to each site to write site specific project plans. Once the project plans have been written, the difficult team members will visit the sites to ensure nothing has been overlooked and to verify the inventory. After each site has approved their project plan, the site will begin writing procedures and packaging/repackaging their waste. In some cases the sites have already begun the process. The waste will be shipped after all of the waste has been characterized and approved.

INTRODUCTION

The DOE manages 35 TRU waste sites in the United States. Out of the 35 DOE sites there are 16 small quantity sites left. With American Recovery and Reinvestment Act (ARRA) funding, DOE has been tasked with reducing the nuclear foot print. A small quantity site is a site that does not have enough waste to make it cost effective to become a certified site. Most of the small quantity sites will only have one or two shipments of TRU waste. All of the small quantity sites will ship

their contact handled TRU waste to Idaho National Laboratory for characterization. Once the waste at Idaho has been characterized, the waste will be shipped to the WIPP. Idaho's hazardous waste permit allows offsite waste in, but all offsite waste must be characterized within six months of receipt and shipped within six months after characterization. Sites with remote handled waste will become a certified site because it takes much longer to get a waste stream approved for shipment to the WIPP site and it is more cost affective. LANL-CO has been tasked to write Project Plans for all of the large and small quantity sites with defense related TRU waste in the DOE complex. Work-Off Plans were precursors to the Project Plans. Los Alamos prepared a Work-Off Plan for each of the large and small quantity sites. The Work-Off Plan identified issues, drivers, schedules, and inventory.

Eight SQSs have been selected to be first to de-inventory their legacy TRU waste; Bettis Atomic Power Laboratory, General Electric-Vallecitos Nuclear Center, Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory- area 300, Nevada Test Site, Nuclear Radiation Development, Sandia National Laboratory, and the Separations Process Research Unit. Each plan is written to address both contact and or remote handled waste. Each Project Plan will assist each SQS de-inventory their site of legacy TRU waste.

A team, from LANL-CO, met and evaluated each of the small quantity sites to decide which sites could be de-inventoried of legacy TRU waste during a campaign that would end September 2011. Eight SQSs were identified to de-inventory their TRU waste by September 2011. After the eight SQSs were chosen, small quantity sites were assigned to staff members at LANL-CO to write site specific Project Plans. The first draft of Project Plans included a schedule with a list of tasks and target dates. The first preliminary draft was sent to CBFO on September 30, 2009. Once each Project Plan was written, the assigned LANL-CO team member and other staff from DOE and Westinghouse TRU Solutions (WTS) traveled to the site to review the Project Plan with the site staff. Comments from DOE and WTS were incorporated into each Project Plan by the LANL-CO staff that was assigned to the specific site. The second draft was sent to CBFO on November 30, 2009 and included deliverable dates and resources loaded in the project schedules.

Each Project Plan includes the sites background and current status, inventory, issues and challenges, drivers, purpose and objectives, uncertainties, risks and opportunities, and critical success factors. After each site approved their project plan, the site began writing procedures for packaging/repackaging their waste. In some cases the sites have already begun the process. The CH waste will be shipped to Idaho once the Waste Acceptance Criteria (WAC) has been met. RH waste will be shipped to the WIPP site once the waste is fully characterized and approved.

The SQSs have a fraction of the waste that large quantity sites possess. During this campaign, the small quantity sites will package all of the legacy TRU waste and ship to Idaho or directly to the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico. The CH waste will go to Idaho and the RH waste will go to the WIPP. Sites that have RH waste will be certified at each of the small quantity sites. The sites will then be listed as de-inventoried sites.

PROJECT PLANS

Background and current status includes the site name, location, historic site mission, and the inventory. This information tells the reader where the site is and what process went on that might have created the waste that will be shipped for disposal.

Site Name

The site name may have more than one name. Several sites have changed their name over the years, but the TRU Waste Inventory may have the site listed by an old name. One example is Argonne National Laboratory-West in now Materials Fuels Complex.

Location

The location is important to list because many of the companies have multiple locations. An example is Knolls Atomic Power Laboratory. This laboratory has two locations one in New York and one in Tennessee.

Historic Site Mission

The historic site mission describes the history of the processes that generated the waste. In order to send the waste to WIPP, the waste must come from a defense mission. Many of the sites have a clear defense mission and the information can be added to the Acceptable Knowledge (AK) document, but sometimes the defense mission is not as clear and the site must go through the formal defense determination process. Once the formal defense determination is approved, then the information can go into the AK.

Inventory

Perhaps the most important information in the document is the TRU waste inventory. Table 1 of each document lists the Waste Stream ID, Current Container, Current Container Count, and the Current Storage Location. The Waste Stream ID is the number that a waste stream is assigned. The current container is the type of container. Some of the containers are drums while others may be boxes. The current container count is the number of containers physically on site at the time of inventory. The TRU waste inventory cut off date is December 31, of each year. The cut off date for the project plans reflects the inventory at the date of the document. However, if a site is repackaging or generating, the numbers will need to be updated regularly.

Table 1.

EXAMPLE ONLY

Waste Stream ID	Current Container	Current Container Count	Current Storage Location
D123456	55-gallon drum	10	Building XYZ
D78910	RH-Canister	1	Building ABC

Issues and Challenges

Issues and challenges identify problems with any packaging, repackaging, waste that may be prohibited the way it is currently packaged or shipping. The difficult waste team will work closely with each site that has issues and challenges.

Drivers

Drivers are goals that a site may have agreed to meet with a regulator or stakeholder. The drivers may also be internal performance goals.

The term de-inventory of legacy defense CH and RH TRU waste means waste that has been generated up to the time of the project plan, if the site is continuing to generate, or the entire waste inventory that has been on the site and will not generate any further waste. Eight SQSs have been identified for de-inventory of the legacy defense TRU waste within the ARRA timeframe.

Purpose

The purpose of the project plan is to assist in planning for the removal of all CH and RH legacy TRU waste identified in Table 1. The CH waste will be compliantly packaged and shipped offsite to Idaho for WIPP certification by 9/30/2011. The RH legacy TRU waste identified will be compliantly packaged and shipped directly to WIPP. Each site that has RH waste will become a certified shipping site.

Objective

The objective of the project plan is to list the tasks and subtasks needed to de-inventory a site of the legacy TRU waste.

Uncertainties, risks and opportunities

Uncertainties, risks and opportunities are associated with much of the waste at all of the generator TRU waste sites. Each project plan identifies the uncertainties, risks and opportunities for each site. Once the uncertainties and risks are identified, the difficult waste team can begin resolving problems. During the process of resolving problems the difficult waste team can also identify opportunities to accelerate the project.

Critical success factors

Critical success factors describe tasks that must be accomplished in order to be successful. Some examples include speeding up the schedule; hiring new staff to repackage; or design and construct new equipment or modify old equipment.

Attachment 1: Facilities Available at SQS

Attachment 1 describes the facilities located at each site. Some sites have Non-destructive assay equipment and or existing gloveboxes for repackaging. Other sites may not have any of the equipment necessary for the packaging or repackaging of the legacy TRU waste. The difficult waste team will be tasked with resolving these issues.

Attachment 1 (Example Only)

Building XYZ has a glovebox for repackaging and a NDA gamma assay instrument.

Attachment 2: SQS Task and Subtask List

Attachment 2 is the schedule that describes the task name, sub task, start date, duration in days, weeks, or months, if the task has a predecessor, and resources identified.

Attachment 2 (Example Only)

	Task Name	Sub Task	Start Date	Duration		Predecessors	Resource Names
1	Defense Determination			0	days		
2	PK				days		
3		Gather documents		0	days		
4		Review for public release			days		
5		Complete PK			days		
6		Determine certification program			days		
7		Submit source documents to WIPP record center			days		
8		Obtain approvals			days		
9	Hazardous Waste Determination				days		
10		Gather documents for objective evidence			days		
11		Review for public release			days		
12		Write Hazardous Waste Determination			days		
13		Obtain approvals			days		
14	Implement packaging procedure				days		
15		Write site packaging procedure			days		
16		Obtain site approvals			days		

	Task Name	Sub Task	Start Date	Duration	Predecessors	Resource Names
17		Meet Personnel Security Requirements			days	
18		Hire and train site personnel to packaging procedure			days	
19	Install Glovebox				days	
20		Conduct Mock Up Activities				
21		Complete installation of glovebox			days	
22		Complete testing on glovebox			days	
23	Retrieve and Package waste compliantly				days	
24		Identify staging area			days	
25		Retrieve waste from storage location			days	
26		Package/ Repackage waste			days	
27	TRAMPAC compliance equipment operational (NDA, NDE, Flamgas)				days	
18		Identify equipment needed and what is available			days	
29		Prepare location for site equipment			days	
30		Stage Site equipment			days	
31		Site will implement a new QA procedure for their equipment			days	

	Task Name	Sub Task	Start Date	Duration	Predecessors	Resource Names
32	Complete TRAMPAC analysis					
33		Perform NDA				
34		Perform NDE				
35		Perform Flamgas analysis				
36		Verify adequacy of filter type				
37		TCO assembles payload and verifies compliance				
38	Mobile Loading Unit approved for operations					
39		Identify equipment needed and available				
40		Schedule mobile loading team for site evaluation				
41		Prepare location for site equipment				
42		Stage Site equipment				
43	Load and Transport to Idaho					
44		Assemble physical payload				
45		Load TRUPACT/ HalfPACT				
46		Obtain Waste Profile Form				
47		Ship to Idaho (or WIPP if RH)				

SUMMARY

The project plans are written for each site to assist the site to prepare for the shipment of their waste to Idaho or WIPP. Once the project plans are written, a team is formed from LANL-CO, Washington TRU Solutions and CBFO. This new team will travel to the sites to present the project plan and obtain concurrence from each site. Once concurrence is obtained the project plan is tracked for progress to ensure completion by September 2011.

The project plans are a tool to assist the sites manage the work load and stay on schedule. The project plans are tracked monthly until the site is close to repackaging and/or shipping. Once the site is actively repackaging and/or shipping, there will be calls weekly. The site calls include all necessary parties so that issues can be discussed and resolved.

The project plans were written to ensure that waste from the eight small quantity sites can be compliantly shipped by September 2011.