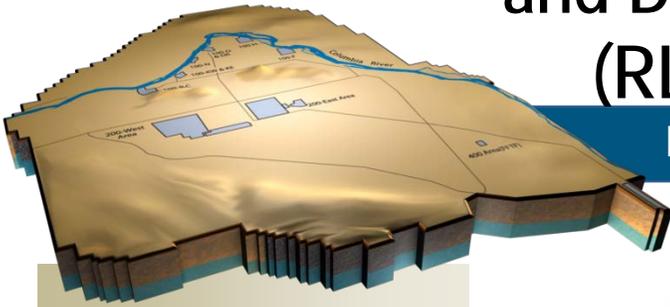
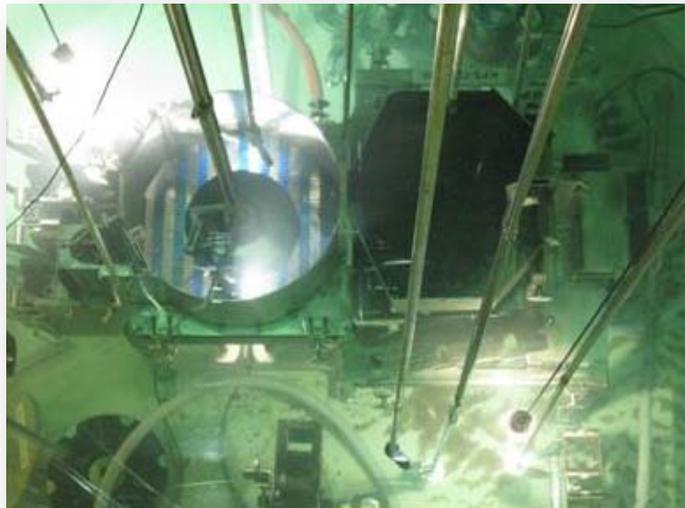


# Section B Spent Nuclear Fuel Stabilization and Disposition (RL-0012)

## Monthly Performance Report



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**Knockout Pot Process Table and Canister Dump Table**



**Phase 2 Decision Support Board Meeting**

May 2011  
CHPRC-2011-05, Rev. 0  
Contract DE-AC06-08RL14788  
Deliverable C.3.1.3.1 - 1

## PROJECT SUMMARY

The project held the Phase 2 Decision Support Board (DSB) Workshop the week of May 9-12. The workshop recommendation was to proceed with warm water oxidation as the baseline technical approach. A second recommendation is to develop a demonstration in parallel for size reduction of the U-Metal using immersion milling and Fenton's Reagent (oxidation using peroxide addition catalyzed by ferrous ions and chloride). The facilitator and project staff developed a report of the meeting presentations and discussion points and delivered it to RL.

The Knockout Pot (KOP) subproject initiated the Pretreatment Operating Campaign on May 5, having completed the Readiness Assessment the previous day. The density separation process of the fuel canisters of KOP material functioned as designed. A hose breach in the Integrated Water Treatment System interrupted the campaign in mid-May, however, and was replaced later in the month. The campaign is to be completed late June or early July 2011, well ahead of the September 30, 2011 TPA Milestone.

KOP Processing System (KPS) qualification was initiated at Maintenance and Storage Facility (MASF) on April 28, following installation of the required hardware. Although solid progress has been made to complete the testing objectives, such as validating the accuracy and repeatability of the Verification Volume Measurement Tool function, testing activities and the resolution of emergent testing deficiencies are taking longer than initially planned. The KPS qualification testing activities are scheduled to be completed in early June. This delayed completion still puts the subproject in a good position to achieve the September 30, 2011 TPA Milestone.

The Engineered Container Retrieval and Transportation System (ECRTS) subproject continued integrated (TRL-6) testing at MASF with three simulants planned. K West simulant testing, the first of three, was completed with demonstration of retrieval/transfer/decant of K West sludge from an engineered container to a Sludge Transport and Storage Container (STSC). K East simulant (the second of three simulants planned) testing is in progress. Retrieval/Transfer of K East simulant has been successfully performed, although decant of the simulant has been more difficult than expected. Additional testing indicates that additional flocculent may facilitate settling and decant of the K East material. Retrieval/transfer/decant of the K East simulant will continue as planned. Testing of settler sludge (the third of the three simulants) will follow.

Activities in support of the K West Annex continued during the month. AREVA Federal Services' (AFS) internal review of the final modification preliminary design continued, with submittal on track for the end of the month. Earlier in the month, the ECRTS subproject initiated regularly scheduled weekly meetings with K West Operations, Maintenance, and RadCon personnel, with meeting agendas including review of the ECRTS process and an overview of the modified K West Annex at the first meeting and the conducting of an electronic walk-through of the modified K West Annex model at the second meeting.

The Sludge Treatment Project (STP) transportation subcontractor, AFS, issued the final shielding analysis for the transport of settler sludge within the Sludge Transport System (STS), which showed that the calculated dose rates – with or without the STSC settler core – were within allowable Fuel – Special Packaging Authorization (F-SPA) transportation restrictions. AFS also submitted the first draft of the thermal and gas generation analysis for the transport of the K West container sludge in the STS, which concludes that payload will remain stable during the assumed transport period and the pressure and heat buildup within the STS Cask are within the design limits; and the final Revision 1 of the K East Sludge Thermal and Gas Analysis, which showed that the proposed IP-2 cover contributes very little to the overall thermal and gas conditions and that the transport of the K East payload does not challenge either the thermal or pressure limits of the STS Cask.

## EMS OBJECTIVES AND TARGET STATUS

Goal #	Goal	Target	Due Date	Status
1	Reduce use of copier paper by 3 percent at 825 Jadwin and MASF during FY 2011	Present goal to STP employees in a memo. Include 2010 usage and 2011 target for Room 301-C and 356 copy machines at 825 Jadwin and copy machine at MASF	12/31/10	Complete
		Issue quarterly status to all employees	03/31/11, 06/30/11	Complete On Schedule
		Issue year-end status to all employees	09/30/11	On Schedule
2	Recycle/reuse test simulant and basin mockup water at MASF	Outline plan for recycling/reuse of test simulant and Basin mockup water at MASF	12/31/10	Complete
		Issue quarterly status to all employees	03/31/11, 06/30/11	Complete On Schedule
		Assess effectiveness of reuse program and evaluate if continued reuse in FY 2012 is warranted	09/30/11	On Schedule

## TARGET ZERO PERFORMANCE

	CM Quantity	Rolling 12 Month	Comment
Days Away, Restricted or Transferred	0	3	N/A
Total Recordable Injuries	0	5	N/A
First Aid Cases	0	13	N/A
Near-Misses	0	0	N/A

## KEY ACCOMPLISHMENTS

- KBC-48586, *MCO Loading Plan for Found Fuel (OCRWM)*, was approved and released by the Office of Civilian Radioactive Waste Management (OCRWM). The document describes the planned loading of the final two multi-canister overpacks (MCOs) to be used to remove remaining fuel scrap from the K West Basins and found fuel sent to K West from Washington Closure Hanford (WCH).
- PNNL conducted a series of tests on SCS-CON-220 (K West floor and pit sludge) samples to simulate the retrieval and settling (with flocculent) process. The test apparatus includes small scale recirculation loops similar to those in the STP ECRTS system for loading sludge into STSCs.
- STP formally requested RL to authorize a One Time Request for Shipment (OTRS) of two MCO casks from K West Basin to the Canister Storage Building. Based on KBC-48586, *MCO Loading Plan for Found Fuel (OCRWM)*, the OTRS describes the planned weight of the remaining two shipments, each to be less than the Safety Analysis Report for Packaging (SARP) weight limit of 46,480 pounds and greater than 44,000 pounds.
- The STSC Package Evaluation (PE) checklist was finalized and submitted to RL for an early review to support the possible early procurement of the STSC. The PE demonstrates that the STSC qualifies as an onsite Type A container and describes key attributes of the container that must be included in the procurement specification.

## MAJOR ISSUES

None identified.

## RISK MANAGEMENT STATUS

**Unassigned Risk**  
**Risk Passed**  
**New Risk**

 Working - No Concerns     Increased Confidence  
 Working - Concern     No Change  
 Working - Critical     Decreased Confidence

Risk Title	Risk Strategy/Handling	Assessment		Comments
		Month	Trend	
STP-030: 100K KOP system operations	Refurbish IWTS, FRS, CLS to minimize operational downtime			Baseline includes refurbishment.
STP-007: Competing K Basin Priorities	Integrated, detailed working schedules/plan-of-the-week meetings			MCO Dry Runs completed, Engineered Container Sampling campaign have all completed. The next STP activity in KW is Pretreatment operations in May, June and early July.
KBC-010: Unexpected TRU Debris or Other Waste	Develop characterization & blending/packaging strategy; establish alternate waste disposition pathways			No issues at this time.
KBC-011: DSA/FHA Limits Impact Waste Staging	Modify DSA/FHA to increase combustible loadings			Work in this area is proceeding without impact.
KBC-018: Discovery of Additional Sludge or SNF	Ensure SNF handling capabilities and WCH agreements are in-place			WCH has delayed shipments, and has requested extension of the window to make additional shipments.
STP-039: KOP Separations Process Qualification	Test the mechanical separations process in a relevant environment at MASF			Pretreatment test equipment modified and shipped to 100K for staging
STP-075A: ECRTS Technology Maturation Testing	Continue technology testing at MASF to demonstrate TRL-6 maturity by March 2012 TRA			Full Integrated Testing (TRL-6) is in-process with no known issues.
STP-082: Changing in Classification of Annex from PCS-2	Continue meetings with RL and stakeholders on hazards analysis			Initial reviews indicate that the PCS-2 is correct classification.

## PROJECT BASELINE PERFORMANCE

### Current Month

(\$M)

RL-0012 Spent Nuclear Fuel Stabilization and Disposition	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance (\$)	Schedule Variance (%)	Cost Variance (\$)	Cost Variance (%)
<b>Base</b>	5.0	5.0	6.1	0.0	0.0	(1.1)	-20.2

Numbers are rounded to the nearest \$0.1M

#### CM Schedule Performance (\$0.0M/0.0%)

The combined STP and 100K current month schedule variance are within thresholds.

#### CM Cost Performance (-\$1.0M/-20.2%)

The current month cost variance was driven by the ECRTS Annex design subcontractor billings that are being incurred without BCWS that is awaiting action on a Baseline Change Request (BCR) approval; and increased costs in the KOP design and testing activities as the subproject nears completion of the final design and the qualification testing of the processing system continues.

Corrective Action: The BCR is scheduled to be implemented in the month of June, which will correct the ECRTS variance. The KOP design and testing variances will be managed within the subproject activities.

## Contract-to-Date

(\$M)

RL-0012 Spent Nuclear Fuel Stabilization and Disposition	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance (\$)	Schedule Variance (%)	Cost Variance (\$)	Cost Variance (%)	Budget at Completion (BAC)	Estimate at Completion (EAC)	Variance at Completion (VAC)
<b>Base</b>	220.3	215.5	223.9	(4.8)	-2.2	(8.4)	-3.9	580.4	590.3	(10.0)

Numbers are rounded to the nearest \$0.1M

#### CTD Schedule Performance (-\$4.8M/-2.2%)

The combined 100K and STP variances are within reporting thresholds.

#### CTD Cost Performance (-\$8.4M/-3.9%)

The combined 100K and STP variances are within reporting thresholds.

#### Contract Performance Report Formats are provided in Appendix A.

#### Estimate at Completion (EAC)

The BAC and EAC include FY2009 through FY2018, the PRC contract period. The variance at completion is due to the cost increase of the ECRTS Annex Design subcontract, without the baseline schedule to reflect the increased scope of the effort. BCR is now scheduled to be presented in June.

The change in EAC from April to May is within reporting thresholds.

## FY2011 FUNDS VS. SPEND FORECAST

(\$M)

RL-0012 Spent Nuclear Fuel Stabilization and Disposition	FY2011		Spend Variance
	Projected Funding	Spending Forecast	
<b>Base</b>	80.7	80.5	0.2

Numbers are rounded to the nearest \$0.1M.

### Funds/Variance Analysis

Funding includes FY2010 carryover and FY2011 new Budget Authority. "Projected Funding" for Base PBSs was changed in May, 2011 to reflect a reallocation among PBSs and a reduction of \$7.3 to align with the final FY 2011 Appropriations Act (RL-0012: -\$3.1M).

### Critical Path Schedule

Critical Path Analysis can be provided upon request.

### Baseline Change Requests

BCRA-PRC-11-001R0, General Administrative Changes for May 2011

## MILESTONE STATUS

Tri-Party Agreement milestones represent significant events in project execution. DOE Enforceable Agreement milestones were established to provide high-level visibility to critical deliverables and specific status on the accomplishment of these key events. The PRC Baseline Revision 2 Update, implemented in September 2010, and subsequent approved BCRs define CHPRC planning with respect to Tri-Party Agreement (TPA) milestones. The following table is a one year look ahead of key milestones.

Number	Title	Type	Due Date	Actual Date	Forecast Date	Status/ Comment
DNFSB 120W	Complete Sludge Treatment	DNFSB	11/30/09			Letter dated 30 June 2010, from Ms Triay to DNFSB, notifying the board of a pending Implementation Plan update that will address this missed milestone.
M-016- 170	Complete Knockout Pot Material Pre-treatment	TPA	09/30/11			On Schedule.

## SELF-PERFORMED WORK

The Section H.20 clause entitled, Self-Performed Work, is addressed in the Monthly Report Overview.

## GOVERNMENT FURNISHED SERVICES AND INFORMATION (GFS/I)

None currently identified.