

Performance Management Plan for the Accelerated Cleanup of the Hanford Site



United States
Department of Energy

Predecisional Draft

Performance Management Plan for the Accelerated Cleanup of the Hanford Site

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United States Department of Energy

P.O. Box 550, Richland, Washington 99352

EXECUTIVE SUMMARY

We, the U.S. Department of Energy, Richland Operations Office and the Office of River Protection, have developed this document to provide DOE-Headquarters, the Office of Management and Budget, Congress, our regulators, tribal governments, and stakeholders our plan for accelerating cleanup of the Hanford Site from 2070 to 2035, and possibly as soon as 2025. In it, we lay out what we believe is a significantly improved approach to the way we do business and get cleanup done. We define five risk-reduction initiatives that require near-term investment to put us in position to end by 2035 the Environmental Management mission at Hanford. Underlying these strategic initiatives is a significant change in the way we do business, particularly in the areas of contracting, project management, budgeting, requirements reductions, and infrastructure management.

Fundamental to our success is the partnership we have built and will continue to nurture with our regulators, the U.S. Environmental Protection Agency, and the Washington State Department of Ecology. While they have played a key role in development of the strategic initiatives, the May 1, 2002 draft of this document is the product of the U.S. Department of Energy and its contractors. It is our hope that by August 1, 2002, we will have a plan endorsed not only by our regulators, but also the great majority of our stakeholders. We are committed to use the processes and cleanup objectives within the Tri-Party Agreement (TPA) to deploy this plan. We also pledge to continue our commitment not just to accelerated cleanup, but to high-quality, comprehensive cleanup that protects human health and the environment.

We have developed five strategic initiatives that accelerate cleanup, reduce risks and put us on the path to completion by 2035.

- 1) We will restore the Columbia River Corridor, completing remediation of 50 burial grounds, 551 waste sites, 261 excess facilities, and 7 plutonium production reactors by 2012, reducing risk to the river and shrinking the Hanford Site.
- 2) We will take several near-term actions to ensure the tank waste program ends by 2035: increase capacity of the planned Waste Treatment Plant (WTP); demonstrate tank closure and start in earnest the process of closing tanks now; and demonstrate alternative treatment and immobilization solutions for lower-risk tank waste, thereby accelerating the completion of tank closures. Many of the activities related to tank waste are on the "critical path" to site closure; the site cannot be closed until they are done, yet much more than the tanks must get done to close the site.
- 3) Besides tanks, our other urgent risks involve our inventories of spent nuclear fuel, plutonium, and cesium/strontium capsules. We will remove and safely store all fuel, sludge, debris and water from the K Basins 10 months early; stabilize and securely store plutonium 9 years sooner; demolish PFP 7 years earlier; and move to dry storage and avoid the need to vitrify cesium/strontium capsules.
- 4) Waste disposal, including addressing over 1,200 waste sites on the Central Plateau, poses another set of challenges to completion by 2035. We plan to accelerate treatment and

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disposal of mixed-low level waste and retrieval and shipment of transuranic waste offsite years ahead of current plans. We will also establish specific plans to address the remaining waste sites in a manner and on a schedule integrated with tank closures to ensure protection of the groundwater.

- 5) We will deal with over 900 excess facilities, including the 5 massive plutonium separation and processing facilities or “canyons,” and may even use the canyons as waste disposal facilities. We will disposition the canyons nearly 20 years early and other excess facilities as quickly as resources permit.

We acknowledge our need to strengthen our business practices to support this acceleration approach. This plan identifies improvements and establishes commitments in the business realm to ensure we remove non-value-added requirements and then drive our contractors to get the work done. This requires clear health, safety, and environmental standards and effective oversight. Appendix A of this plan contains specific commitments for which we and our contractors will be held accountable.

We believe this plan, as it evolves between now and August 1, 2002, will provide a basis for predictable, stable and sufficient funding as we and our contractors meet these commitments. Setting achievable goals with realistic funding requirements, incentivized contracts, and measurable outcomes—and then doing the work we promised—is our best prospect for ensuring long-term funding to get this job done well by 2035 or sooner.

Table 1. Hanford Cleanup – What Will It Be?

Cleanup Activity	What It Is Today	What It Will Be Under This Plan
Complete cleanup	2070	2035 (2025?)
Start tank closure ^a	2012	2002
Close first tank ^a	2014	2004
Demonstrate alternative technologies for lower-risk tank waste		2004
Deinventory Plutonium Finishing Plant (PFP) plutonium	2014	2005
Remove 15,000 drums of buried transuranic waste	2010	2006
Remove 130 million curies of cesium/strontium from the Waste Encapsulation and Storage Facility	2017	2007
Treat 14,000 cubic meters mixed low-level waste	2012	2008
Demolish PFP	2016	2009
Achieve Waste Treatment Plant full performance	2018	2011
Complete River Corridor cleanup	2037	2012 ^(b)
Complete closure of 50 to 140 tanks	2024	2018
Complete tank waste treatment	2049	2028

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Cleanup Activity	What It Is Today	What It Will Be Under This Plan
Active portion of site	586 square miles (1,158 518 square kilometers)	~75 square miles (194 square kilometers) miles by 2012
Approximate Cost	\$90-\$100 billion	\$50-\$60 billion

^aBoth milestones are currently Tri-Party Agreement target dates.

^bSeveral discrete projects in the River Corridor will not be completed by 2012. The 618-10 and 618-11 burial grounds will be completed in 2018; several active facilities in the 300 Area related to the Pacific Northwest National Laboratory remain operational; the reactor cores in Interim Safe Storage are pending final disposition; ongoing groundwater cleanup, monitoring, and stewardship activities will be required based on final groundwater remedies; and the Fast Flux Test Facility is not part of the River Corridor Project.

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1.0 PURPOSE

This document describes the U.S. Department of Energy's (DOE) plan to transform and accelerate cleanup of the Hanford Site. Existing plans take several decades to complete, require significant and unrealistic levels of funding, and are slow to reduce near-term risk. We believe we can accelerate the completion of cleanup from 2070 to 2035, and possibly to 2025, by reducing excess conservatism, substantively changing our technical strategy and management approach, and making new front-end investments. Our plan draws upon the recommendations contained in the Environmental Management Top-to-Bottom Review conducted earlier this year, and the novel ideas that have emerged from the Hanford Cleanup Constraints and Challenges Team (C3T) process. Integrated solutions that reflect a Hanford Site-wide approach have been used throughout this plan. Deploying this plan will result in rapid, cost-effective solutions that drive real performance and protect human health and the environment. The DOE has signed a letter of intent with the Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA) to cooperatively develop approaches to accelerate site cleanup. This *Performance Management Plan for the Accelerated Cleanup of the Hanford Site* fulfills a commitment for the DOE to produce a draft work plan by May 1, 2002. It is our intent to achieve agreement on a final plan by August 1, 2002.

The *Performance Management Plan for the Accelerated Cleanup of the Hanford Site* is the result of fundamental changes underway at the Hanford Site for some time and a renewed urgency to finish cleanup. These changes have resulted from improvements in defining and focusing the work, developing and implementing contracts to perform it, and working in partnership with the tribal governments, regulatory, and stakeholder communities – which have long been pushing for faster progress and better results. In addition, the Administration has made accelerating cleanup a priority by enlisting management leadership with proven experience, committing additional, stable financial resources through a Cleanup Reform Account, and working with DOE sites across the country to identify further cleanup reforms and initiatives. These factors have created the right climate for building on our successes with the accelerations and new approaches we are proposing.

While we have amassed a great deal of knowledge and experience over the last few years – indeed a momentum that increases our confidence that the 2035 end date is achievable – we also acknowledge there is still uncertainty to be resolved in this approach. Our success will require, among other things, the continued partnership and trust of our regulators; excellent planning and coordination among various agencies, contractors, and constituent groups; further reform and discipline within DOE; the application of new technologies; an ability to manage the continuing uncertainties and schedule risks; coordination and cooperation with the DOE sites that will ultimately receive some of our waste; and additional determination, creativity, and innovation.

This plan will be updated as our knowledge increases and as outlined in the Letter of Intent. Our pledge is to continue to look for better, safer, more efficient methods; to work openly and collaboratively through the uncertainties; and to keep an unwavering focus on getting this critical work done by 2035 or sooner.

2.0 BACKGROUND

The Hanford Site is the largest of the three original defense production sites founded in World War II as part of the Manhattan Project. At 586 square miles, Hanford is about half the size of the state of Rhode Island. Over its 40 years of operations, the site produced approximately 74 tons of plutonium – nearly two-thirds of all the plutonium produced for government purposes in the United States. Between 1943 and 1963, nine plutonium production reactors were built along the Columbia River and five processing facilities (canyons) were built on the Central Plateau, with over 900 support facilities and radiological laboratories around the site. Until the late 1980s, plutonium and reusable uranium were separated from irradiated fuel using various chemical precipitation and solvent extraction techniques, and the plutonium was exported to other DOE sites for eventual use in United States nuclear weapons.

The Legacy

The resulting environmental legacy is multifaceted and immense. Highly radioactive waste from fuel-processing operations was piped to underground tanks and less radioactive waste was discharged to the soil. Uncontaminated and slightly contaminated liquids and cooling water were pumped to ditches and ponds. Contaminated water discharged from the reactors was pumped to nearby soil and into the Columbia River. Solid waste was buried in shallow trenches or stored inside facilities. Forty percent of the approximately one billion curies of human-made radioactivity that exist across the nuclear weapons complex resides here, and must be dealt with to protect human health and the environment. The cleanup challenges include:

- More than 50 million gallons of high-level liquid waste in 177 underground storage tanks, 67 of which are known or suspected to have leaked;
- 2,300 tons (2,100 metric tons) of spent nuclear fuel – 80% of the remaining irradiated uranium fuel in DOE's inventory – that was left in water-filled basins near the Columbia River when fuel reprocessing was halted;
- 12 tons of plutonium (in various separated forms at the Plutonium Finishing Plant, contained in the spent fuel at the K-Reactor basins, and in the spent fuel at the Fast Flux Test Facility);
- About 25 million cubic feet of buried or stored solid waste in 175 waste trenches;
- About 100 square miles of groundwater contaminated above EPA drinking water standards, containing contaminants such as metals (e.g., chromium), chemicals (e.g., nitrates, trichloroethylene, carbon tetrachloride), and radionuclides (e.g., tritium, technetium-99, uranium, strontium-90);
- 1,936 stainless-steel capsules of radioactive cesium and strontium and roughly 130 million curies of material in water-filled pools;
- More than 1,900 identified waste sites and 500 contaminated facilities at Hanford; and

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- Contamination from the discharge of more than 450 billion gallons of liquid into the soil column over 50 years of site operations.

For much of the 1990s, physical progress was slow as the Hanford Site completed the characterization and planning necessary to transition from defense nuclear production to environmental cleanup and prepared to do work that was being done in very few other locations in the world. But starting in the mid-1990s, and accelerating in the last few years, we have made major physical progress.

Building Momentum

DOE, Ecology, and EPA—partners in the 1989 *Hanford Federal Facility Agreement and Consent Order* (the Tri-Party Agreement) for site cleanup—have worked hard to bring a well-defined and manageable focus to Hanford’s cleanup outcomes: restoring the lands along the Columbia River Corridor and transitioning the central portion of the Hanford Site -- the Central Plateau -- to a modern, protective waste management operation.

We are making substantial progress toward reducing risk and achieving these outcomes. All underground radioactive waste tank safety issues have been resolved and all tanks removed from the Congressional “Watch List.” We are stabilizing the single-shell waste tanks by removing the pumpable liquids. The Plutonium-Uranium Extraction Plant (PUREX) and B-Plant chemical processing plants (“canyons”) were the first ones in DOE to be deactivated to a low-cost maintenance state. Spent nuclear fuel is being taken out of wet storage and moved away from the Columbia River to safe storage on the Central Plateau. Plutonium is being stabilized and packaged for safe, secure, long-term storage and disposition. The start of construction on the Waste Treatment Plant (WTP) for tank waste treatment and immobilization is imminent. We are actively dealing with contaminated groundwater plumes. We are taking down reactor complexes and “cocooning” reactor cores for interim safe storage. We have stopped all unpermitted discharges to the soil. We have moved more than three million tons of contaminated soil away from the Columbia River shoreline and into the Environmental Restoration Disposal Facility near the center of the Hanford Site. We have removed over a million curies of radioactivity from the contaminated facilities near the City of Richland and nearly a thousand metric tons of excess uranium have been moved offsite. The quantity of waste being stored above ground is actually decreasing for the first time in Hanford’s history, and we have sent nearly 400 drums of transuranic waste to the Waste Isolation Pilot Plant (WIPP) for disposal. All of this progress has been made while transforming the site safety environment to be among the best in the DOE complex. We have successfully transitioned from managing risk to reducing it.

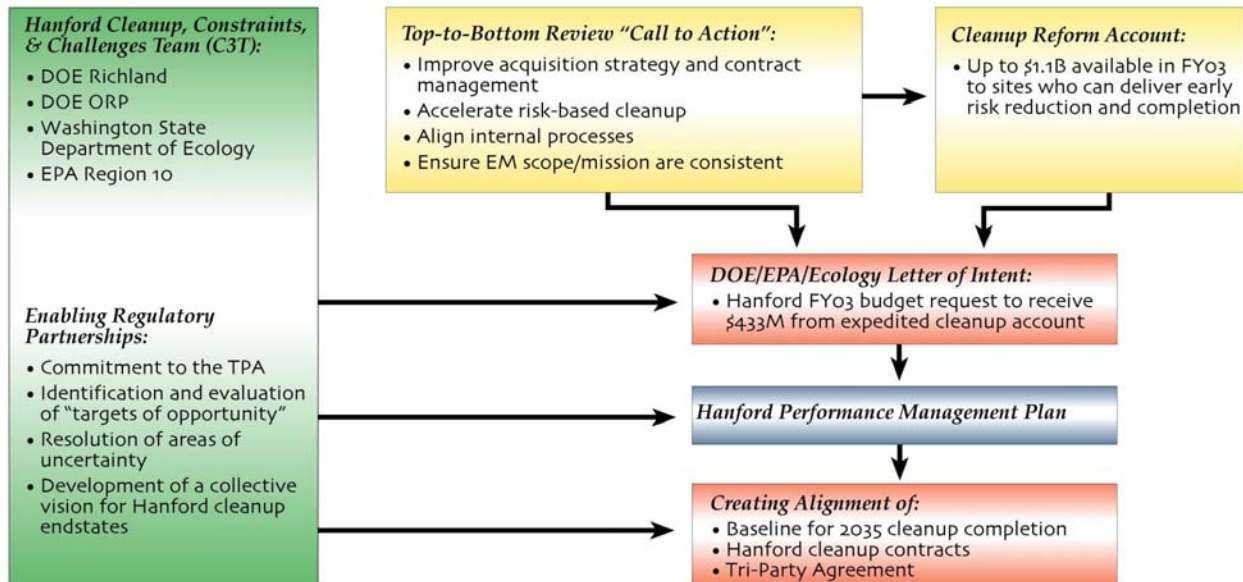
Call to Action

Working well to the existing baseline schedule for Hanford cleanup isn’t enough. As emphasized in the EM Top-to-Bottom Review and as reinforced by DOE’s proposal for the Cleanup Reform Account, a 2070 end-point is too late and a cost of \$90 billion is too much. Now is the right time for us to focus on accelerating risk reduction and cleanup, and our work over the last few years has us well positioned to do so. First, we can leverage the experience we have gained and physical progress we have made. Second, we have renegotiated our major contracts to be performance-based and focused on completing specific pieces of work with incentives for cost savings and schedule acceleration -- one contract provides \$2.2 billion to do

what was previously estimated to cost \$2.5 billion, and the other provides \$3.2 billion for work previously estimated to cost \$3.6 billion. But perhaps most important to our potential for success is the fact that DOE, both in Richland and at DOE-Headquarters (DOE-HQ) in Washington, D.C., has reached a new point of cooperation with our regulators, Ecology and EPA, through C3T. Through a governing body that includes the DOE Richland Operations Office (RL) and the DOE Office of River Protection (ORP) Managers, the EPA Region 10 Administrator, and the Director of the Washington State Department of Ecology, we have come together to look at innovative approaches, identify and knock down barriers, brainstorm possibilities, and lay out a path forward that embraces the priorities set forth by the Tri-Party Agreement (TPA), the Hanford Advisory Board, the surrounding communities, the area Tribal Nations, and the public. This level of cooperation is unprecedented and forms the foundation for this strategy and the regulatory and technical pathways we believe can lead to early and successful completion of Hanford cleanup. A graphical representation of Hanford’s Cleanup Reform Process is depicted in Figure 1.

Figure 1. Hanford’s Cleanup Reform Process.

Hanford’s Cleanup Reform Process

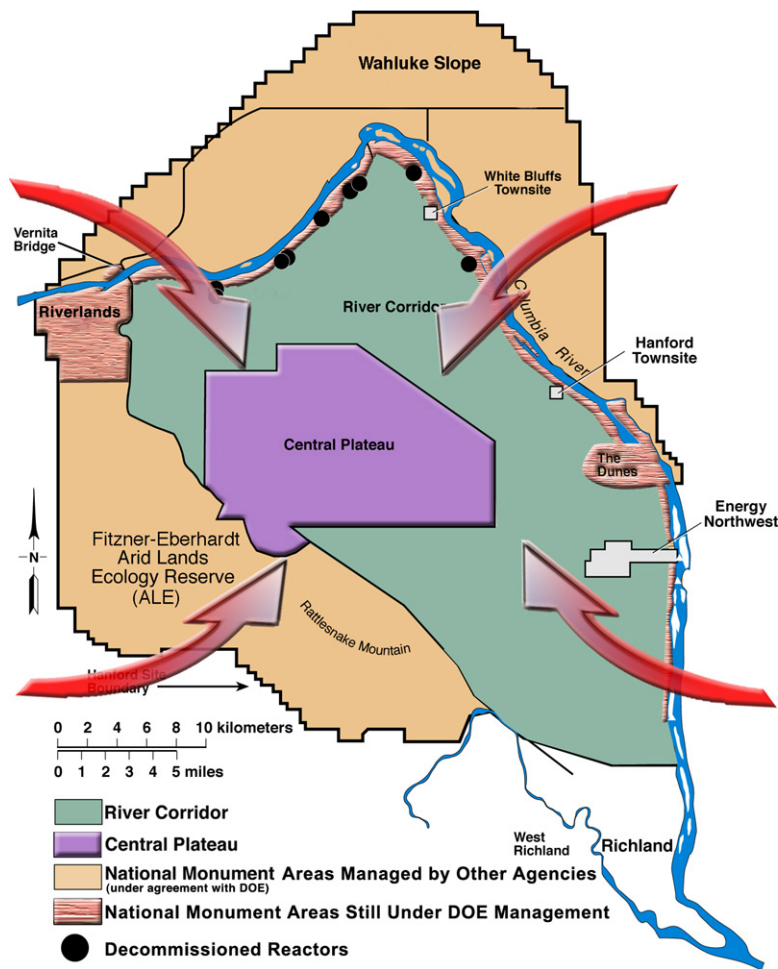


3.0 THE HANFORD SITE IN 2035

What will it mean to have “cleaned up” the Hanford Site? What will the site look like and what will be left? What activities might remain? Who will benefit?

Successful Hanford cleanup will mean eliminating a major threat to human health and the environment. It will mean permanent protection of the groundwater and the Columbia River. It will mean freeing up large stretches of land – much of it along the Columbia River shoreline and part of the Hanford Reach National Monument – for conservation, tribal, recreational and industrial uses. This “shrinking” of active Hanford cleanup operations to the Central Plateau is depicted in Figure 2. It will mean the end of the DOE’s Environmental Management (EM) Cleanup mission at Hanford and a major taxpayer liability – currently around \$2 billion each year.

Figure 2. Shrinking the Hanford Site.



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Envisioning this “end state” in 2035 – and hopefully sooner – we see about 85% of Hanford cleaned to unrestricted surface use standards, and the remaining core zone having gone through a closure process that is protective of human health and the environment, specifically:

- The approximately 210 square miles (546 square kilometers) that comprise the Columbia River Corridor will be cleaned to the approved Records of Decision by 2012. All waste sites will have been removed and backfilled. All excess buildings will have been removed and real property dispositioned. The first of Hanford’s reactors could be a museum recognizing Hanford’s scientific and engineering feats, and the remaining eight will be “cocooned” for safe storage until a final decision on their disposal is made. The 100 and 300 Areas in the River Corridor could be deleted from EPA’s National Priorities List as described in EPA’s 1995 Deletion Policy. Although there will be some continuing degree of engineering and institutional controls on the use of groundwater, the land will be cleared for unrestricted surface use. Some land will be included as part of the Hanford Reach National Monument. By the time all this work is complete in 2012, there will be just two final DOE activities remaining - first, several facilities in the 300 Area will still be operating to service the ongoing cleanup mission and Pacific Northwest National Laboratory. Second, cleanup of the 618-10 and 618-11 burial grounds, which contain very high-radiation-level transuranic waste, will start following the design and implementation of retrieval technologies and treatment capabilities and will be complete by 2018. (This plan does not discuss final decontamination and demolition of the Fast Flux Test Facility because it is currently funded within the Department’s Nuclear Energy Program. However, we intend to carry out the direction of the Secretary of Energy to close the reactor and will do so in compliance with the Tri-Party Agreement.)
- We will have completed any activities necessary for transfer of the Fitzner-Eberhardt Arid Lands Ecology Reserve (ALE), the Riverlands and the Wahluke Slope, a total of 267 square miles (692 square kilometers), to the U.S. Fish and Wildlife Service by 2005.
- In the Central Plateau, we will have packaged and shipped offsite all plutonium and spent nuclear fuel. We will have shipped offsite all transuranic waste that requires retrieval. Tank waste will have been treated, immobilized and disposed. Hanford’s five massive canyon facilities will have either been filled with waste and capped or demolished. The other waste sites will have been removed, capped, or otherwise dispositioned. The underground waste tanks will be closed. The WTP and all its support facilities will have been demolished or otherwise dispositioned. We will have petitioned EPA to remove the Central Plateau’s 200 Area from the National Priorities List. We envision the surface areas of the central portions of the Central Plateau to be cleaned to an industrial-use standard. As such, the Central Plateau will be fenced off and controlled, but it and the remaining parts of Hanford would be ready to be turned over from the EM program to another federal owner for post-cleanup maintenance and monitoring (stewardship).
- Post-2035, we could expect some level of ongoing activity in the Central Plateau – including commercial waste operations (U.S. Ecology’s disposal site is leased through 2064), the Navy’s disposal of decommissioned naval reactor cores, stewardship, and perhaps ongoing DOE waste disposal operations. There would also be engineering and institutional controls in place to continue ongoing groundwater monitoring for the foreseeable future. We believe there will always be a federal responsibility at Hanford, but DOE’s EM cleanup work would be complete.

4.0 HANFORD'S ACCELERATED CLEANUP STRATEGY – GETTING TO 2035

At the heart of Hanford's accelerated cleanup strategy is our commitment to accelerate risk reduction while protecting the health and safety of workers and the public, protecting the environment, and improving national security. The accelerated cleanup strategy is based on transforming the program from managing risk to actually reducing risk. It is focused on five strategic initiatives with high returns on near-term investment, a more closure-driven way of looking at our ongoing programs in the Central Plateau (like groundwater and waste sites) and a re-engineered business strategy. Section 4.0 lays out this integrated, comprehensive approach to accelerating cleanup, grounded upon these four enabling elements:

- Focusing our resources on activities that accelerate and result in the reduction of risk to human health and the environment;
- Deploying comprehensive business approaches that add assurance that our approaches to Site cleanup will yield success;
- Working closely with our regulators to make timely key governing decisions and better guide and enable physical cleanup progress; and
- Developing a sense of urgency to get done with cleanup.

Under our new strategy of accelerated risk reduction, the first enabling element will be primarily accomplished by accelerating actions that result in attainment of one or more of the following risk-reduction objectives (in addition to improving national security through consolidation of special nuclear materials):

- Eliminating risks that could pose an imminent threat to humans (workers and the public);
- Removing/stabilizing high-risk materials;
- Deactivating and decommissioning excess facilities; and/or
- Minimizing long-term risks associated with radioactive and chemical materials that remain on the Hanford Site following site closure.

We have already made substantial progress in eliminating imminent threats as evidenced by the removal of all tanks from the Congressional Watch List, the removal of spent fuel from production reactor facilities, and ongoing groundwater treatment activities. We deploy Integrated Safety Management (ISM) principles as part of our lifecycle project planning to help us identify what work is appropriate and desirable, and to eliminate unnecessary work activities, and remove outdated or inappropriate requirements. In so doing, we avoid unnecessary worker risk and better focus our resources on activities that enhance the protection of human health and the environment. The C3T process is one ongoing manifestation of ISM and the strategic initiatives and approach to accelerating cleanup set forth in this plan is another. We will

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continue to apply ISM at all planning and operational levels to enhance safety and focus on the reduction of risk.

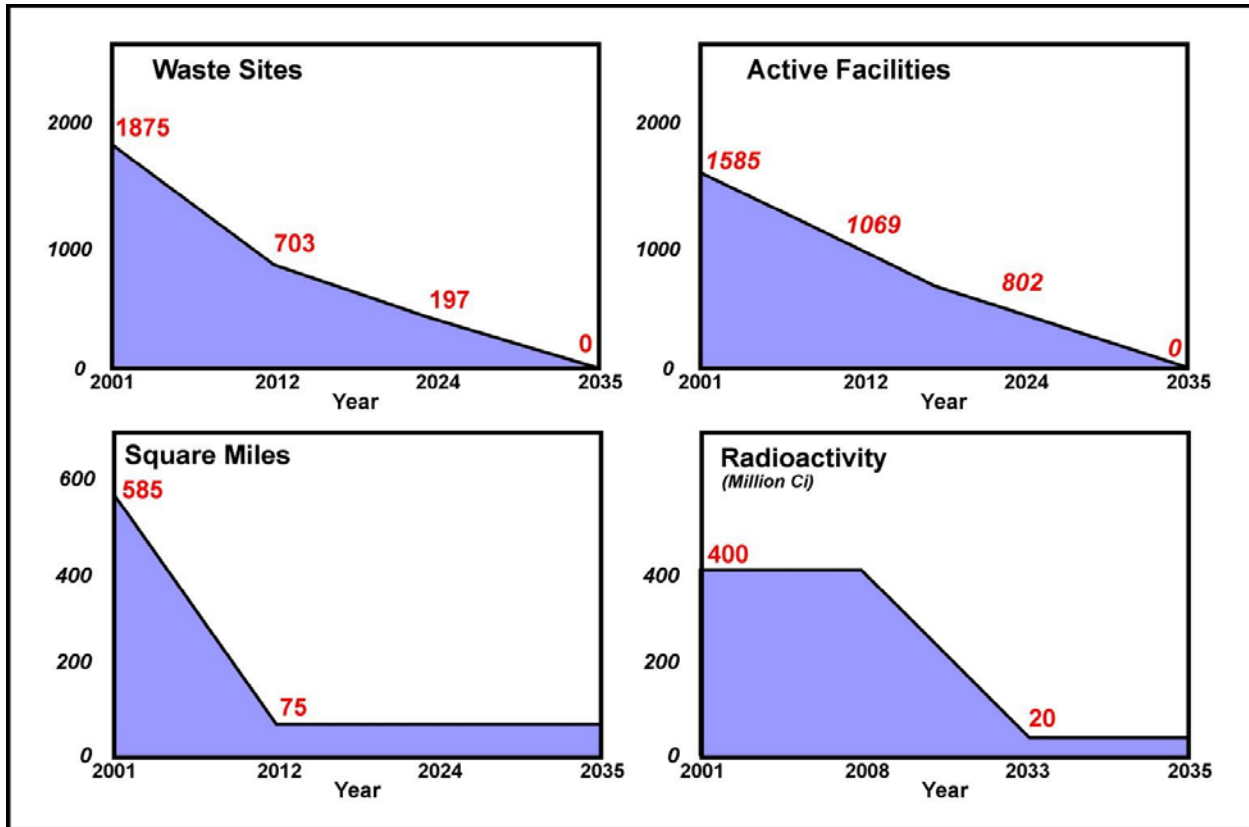
The following five strategic initiatives, in conjunction with other activities, accelerate the attainment of the second, third, and fourth risk-reduction objectives.

- **Strategic Initiative 1** – *Accelerate the Columbia River Corridor Cleanup by More Than 20 Years to 2012.* Our River Corridor cleanup initiative will rapidly reduce the threat to the groundwater and to the Columbia River environment posed by the several hundred waste sites, excess facilities, and burial grounds that exist along the River Corridor.
- **Strategic Initiative 2** – *Accelerate Tank Waste Treatment Completion by 20 Years.* This comprehensive initiative accelerates the treatment of tank wastes and the closing of tank farms (including ancillary equipment and facilities) to more rapidly reduce long-term health and environmental threats associated with the potential release of radioactive and chemical wastes stored in those tanks, and allow earlier closure of the Hanford Site.
- **Strategic Initiative 3** – *Accelerate the Stabilization and De-Inventory of Nuclear Materials.* This initiative, which addresses the second largest collection of radioactive materials on the Hanford Site, is focused on reducing health and environmental threats due to spent nuclear fuel, plutonium, and other materials currently in forms unsuitable for long-term storage or disposal.
- **Strategic Initiative 4** – *Accelerate Waste Disposal and Source-Term Remediation.* This initiative reduces long-term threats to the groundwater by treating and disposing of mixed low-level wastes on the Central Plateau; by exhuming, treating, and disposing of transuranic (TRU) wastes at the WIPP facility; and by remediating approximately 1,200 waste sites (ponds, cribs, trenches, leak sites, burial grounds, etc.) on the Central Plateau.
- **Strategic Initiative 5** – *Accelerate the Decontamination and Decommissioning of Excess Central Plateau Facilities.* This initiative reduces long-term threats by decommissioning the massive canyon facilities and placing them in a long-term state that will be protective of human health and the environment, and by demolishing approximately 900 other excess facilities on the Central Plateau.

Each of these five strategic cleanup acceleration initiatives including its rationale, our planned contracting approach for implementation, and initiative-specific cost, schedule, regulatory, and technical risks are discussed in Section 4.1. The overall Hanford Site schedule, including the critical path and key cleanup targets, is illustrated in Figure 3.

Figure 4 provides an overview of the planned performance metrics associated with the cleanup acceleration initiatives. Remediation of waste sites, disposition of excess facilities, shipment of radioactive materials and wastes offsite, and physical reduction of the active cleanup areas are all measures of real, near-term risk reduction actions planned as part of these initiatives. Under the existing baselines, significant shipment of wastes offsite, disposition of most facilities, and remediation of waste sites and release of land for other uses would be decades later than shown on Figure 4.

Figure 4. Accelerated Cleanup Plan Performance Metrics.



We also recognize the need to fundamentally reform the way we look at ongoing, long-term work on the Central Plateau. Groundwater protection is one of our most daunting challenges and we need to implement true protection strategies. Similarly, we need to be logical and protective in our waste site remediation, ensuring cleanup of the contaminated soil on the Central Plateau is coordinated with tank remediation and closure. Finally, we must establish risk exposure scenarios considering future land uses and the values of area Tribal Nations and stakeholders.

Therefore, in addition to the five strategic initiatives, we are undergoing major rethinking of how we address the rest of the work on the Central Plateau. Building on our C3T activities, we are working with our regulators to develop a comprehensive cleanup strategy for the Central Plateau, including an integrated groundwater protection strategy. Nearly all cleanup decisions that need to be made at the Hanford Site are directly or indirectly linked to protection of the groundwater under the site. Our overall Central Plateau cleanup strategy will provide the basis for arriving at a consistent and logical set of cleanup decisions to ensure consistency, protection of human

health and the environment, and efficiency. Key elements of this strategy include the following:

- **Streamlined approach to waste site assessment and remediation.** We recently negotiated a TPA change package that streamlines our approach to conducting waste site assessments on the Central Plateau. The strategy provides a logical set of points in time at which multiple remediations, corrective measures and closure decisions can be coordinated. The strategy enables linkage of tank closure and canyon disposition actions with related/adjacent waste sites. Figure 4 illustrates the interconnections among some of these decisions.
- **Development of risk exposure scenarios linked to future land uses.** We are working with our regulators, stakeholders, and the Tribal Nations to determine the appropriate exposure scenarios for the Central Plateau. Determining appropriate post-closure risk scenarios will help us guide all Central Plateau cleanup projects in a consistent manner. This global approach has the potential to save time and money by avoiding project-by-project decisions and potentially inconsistent and sub-optimal cleanup decisions.
- **Development of an integrated and efficient groundwater protection strategy.** We are accelerating our efforts to protect groundwater and remediate high-risk waste sites to address current groundwater contamination and minimize any further contribution to groundwater plumes. We have over 800 active monitoring wells on the Hanford Site to monitor the extent of contamination and the progression or regression of the plume boundaries. We have teamed with our regulators under the C3T initiative to mesh the groundwater monitoring requirements under the *Atomic Energy Act (AEA)*, the *Resource Conservation and Recovery Act of 1976 (RCRA)*, and the *Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA)* regulations. This will better enable us to move towards a consolidated, integrated groundwater monitoring network driven by sound science and information needs.
- **Development of an integrated set of modeling and analysis tools.** We are developing a Hanford Site-wide modeling strategy that will ensure all assessments performed onsite are based on consistent data and conceptual models. This will better enable us to correlate the cleanup levels being pursued today with the effectiveness of groundwater protection over many generations. It will also provide us insight for designing and implementing our long-term groundwater monitoring strategy, a key element of long-term stewardship.

Critical to our success in all of the above strategic initiatives is a well-defined business strategy. We discuss crosscutting elements of our business strategy for ensuring the success of these initiatives and the overall Hanford Site cleanup in Section 4.2. Transformational business processes will be integral to planning and managing our work in a manner that will help us guard against cost growth, schedule delays, and other programmatic risks that could impact progress. For example, because DOE relies on contracts for accomplishing the actual physical work of cleanup, effective contracting practices are essential to acceleration of Hanford Site cleanup. We will make improvements in both our overall acquisition strategy and contract management. We will focus on performance-based contracts; instill greater clarity in contracts with respect to work scope, requirements, and end points; increase emphasis on real risk-reduction by focusing fees on end points rather than intermediate milestones; improve government oversight of contractors; and improve government discipline and accountability in identifying and providing

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government-furnished items and services (including such things as equipment, work authorizations, coordination with receiver sites, and funding) in time to support the contractors' efforts. In addition, we will prioritize cleanup work across the Hanford Site to achieve the greatest risk reduction at an accelerated rate. We will improve work planning, apply project management principles to all core work areas, and apply DOE requirements in a manner consistent with the work at hand.

4.1 STRATEGIC INITIATIVES

4.1.1 Strategic Initiative 1 – Accelerate the Columbia River Corridor Cleanup by More Than 20 Years to 2012

Description

This strategic initiative combines the River Corridor cleanup actions, places them in one contract, and accelerates those cleanup actions. The Hanford Site River Corridor contract includes 50 burial grounds, 551 wastes sites, 261 excess facilities, and 7 plutonium production reactors adjacent to the Columbia River. These waste sites and facilities have contaminated the groundwater with radionuclides and chemicals above drinking water standards and are within 1 mile of the river or are inside of the area designated as the Hanford Reach National Monument.

Accelerated River Corridor cleanup will “cocoon” the remaining six reactors for interim safe storage pending a final decision on their disposal; remove or provide for the long-term stabilization of all remaining wastes that threaten the Columbia River; take down the remaining buildings (with the exception of a few laboratory/research facilities in the 300 Area); and with the exception of two major burial grounds (618-10 and 11), eliminate the threat this area poses to the groundwater.

Accelerating this work is a priority for Tribal Nations and Hanford stakeholders, and the Tri-Parties have agreed to an accelerated schedule for this project. We have separated this scope and structured it as a “closure” project, and in the second half of 2002, expect to award a cost-plus-incentive-fee contract that will reward efficiency and results measured as concrete endpoints. The contract also provides enhanced rewards for contractor performance that accelerates cleanup and reduces cost.

Completing River Corridor cleanup more than 20 years earlier than the current baseline will save more than \$1 billion. When we complete the work and mitigate River Corridor risks to human health and the environment, DOE will petition EPA to remove the River Corridor (100 and 300 Areas) from the National Priorities List (NPL), which will shrink the footprint of active cleanup at Hanford by 210 square miles (544 square kilometers), and allow us to focus those freed-up resources and attention on accelerating risk reduction on the Central Plateau.

Rationale

The River Corridor acceleration initiative implements the Hanford 2012 plan to close most of the River Corridor over 20 years earlier than planned. Laboratory and research-related support facilities that have longer-term missions will remain operational in the 300 Area after 2012. The Hanford Reach National Monument is recognized as an important and sensitive location for the Pacific Northwest salmon recovery program. Stakeholders, Tribal Nations, and regulators have proclaimed cleanup along the Columbia River, along with tank waste remediation to be the highest priority for cleanup. River Corridor cleanup removes or provides for long-term stabilization of all remaining wastes that can pose a near-term threat to the Columbia River. For

example, over the last year, we retrieved 11 spent fuel elements from the soil-filled basin at the F-Reactor Site, located less than ~1,000 yards from the Columbia River.

Approach

Acquisition Strategy

Most of the River Corridor cleanup scope is being combined from two cost-plus-award-fee contracts to a single performance-based cost-plus-incentive-fee contract. This will put the River Corridor Project under one contract to derive efficiency and economies of scale. The Request for Proposals for this contract has been issued and proposals are due May 20, 2002, with award anticipated in August 2002, if discussions prove not to be necessary, or November 2002 if they are necessary. The contract scope is remediation activity end points. It has no extraneous work not directly associated with River Corridor cleanup. The contracting vehicle provides enhanced rewards for contractor performance that accelerates cleanup and reduces cost.

Regulatory Alignment Strategy

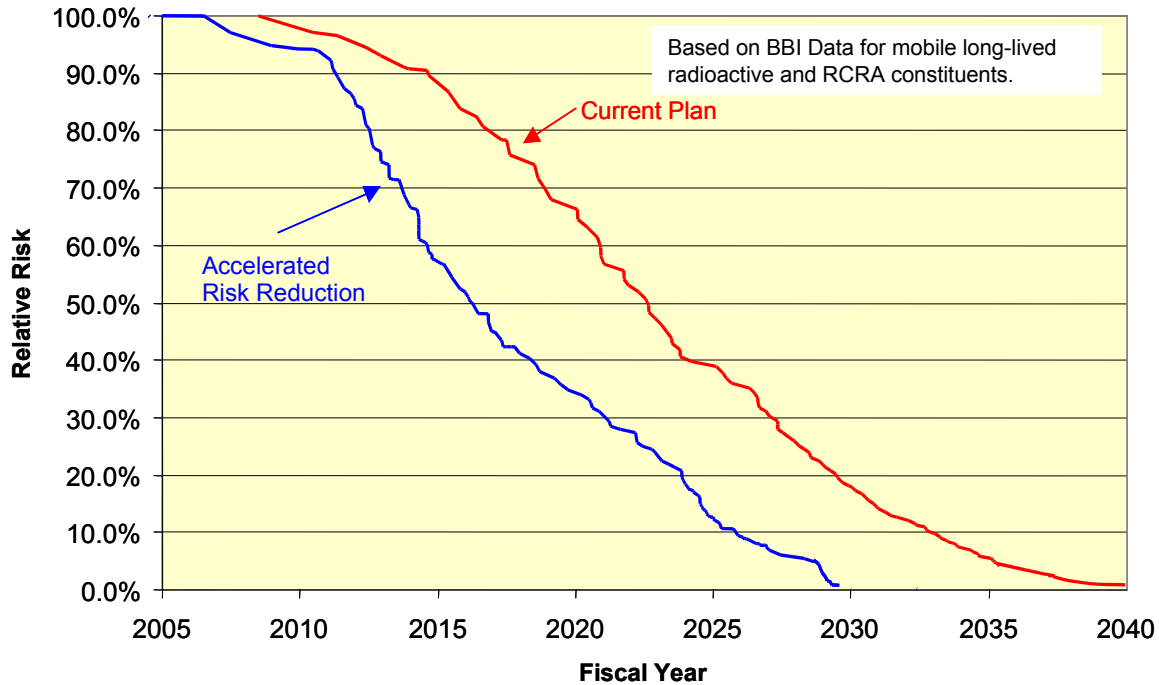
Interim Records of Decision (RODs) for cleanup along the Columbia River are in place with our regulators. In addition, DOE, EPA, and Ecology have reached an agreement for the overall cleanup schedule of the River Corridor, in accordance with the TPA, which provides the overall regulatory strategy and milestones for completing cleanup. This strategy will reduce near-term risks and streamline overall cleanup. One streamlining initiative in this agreement is integrating the closure of hot cells in Building 324, which is being done under RCRA, with the overall deactivation, decontamination, decommissioning, and demolition of Building 324 under CERCLA. This integration will save millions of dollars.

4.1.2 Strategic Initiative 2: Accelerate Tank Waste Treatment Completion by 20 Years, Accelerate Risk Reduction, and Save \$20 Billion

Description

This initiative drives early risk-reduction to more rapidly protect human health and the environment from Hanford tank waste-related risk. This initiative completes the cleanup of Hanford tank waste 20 years earlier, initiates tank closure activities 10 years earlier, and completes the tank cleanup mission for as much as \$20 billion less than the current baseline. Figure 5 illustrates the acceleration in risk reduction that we estimate could result from the timely implementation of this initiative.

Figure 5 – Planned Approach to Accelerating Risk Reduction Via Faster Waste Treatment and Tank Closures



Source: Developed using data from June 30, 2001 Hanlon Report and the October 2000 Best Basis Inventory; tank-by-tank risks by Ted Hohl considering air and groundwater pathways; approximated risk reduction comparisons by S. Short based on assumed retrieval, treatment, and closure schedules

This strategic initiative is designed to transform and accelerate current plans to cleanup Hanford tank waste – over 50 million gallons (190 million liters) of highly radioactive and hazardous wastes located in 177 underground tanks on the Central Plateau. Existing plans to cleanup Hanford tank waste are conservative, take several decades to complete, require significant and unrealistic levels of investment, and are slow to reduce risks associated with Hanford tank waste. The risks imposed by the Hanford tank waste are significant – and rapid, cost-effective solutions are necessary to drive early risk reduction and protect human health and the environment.

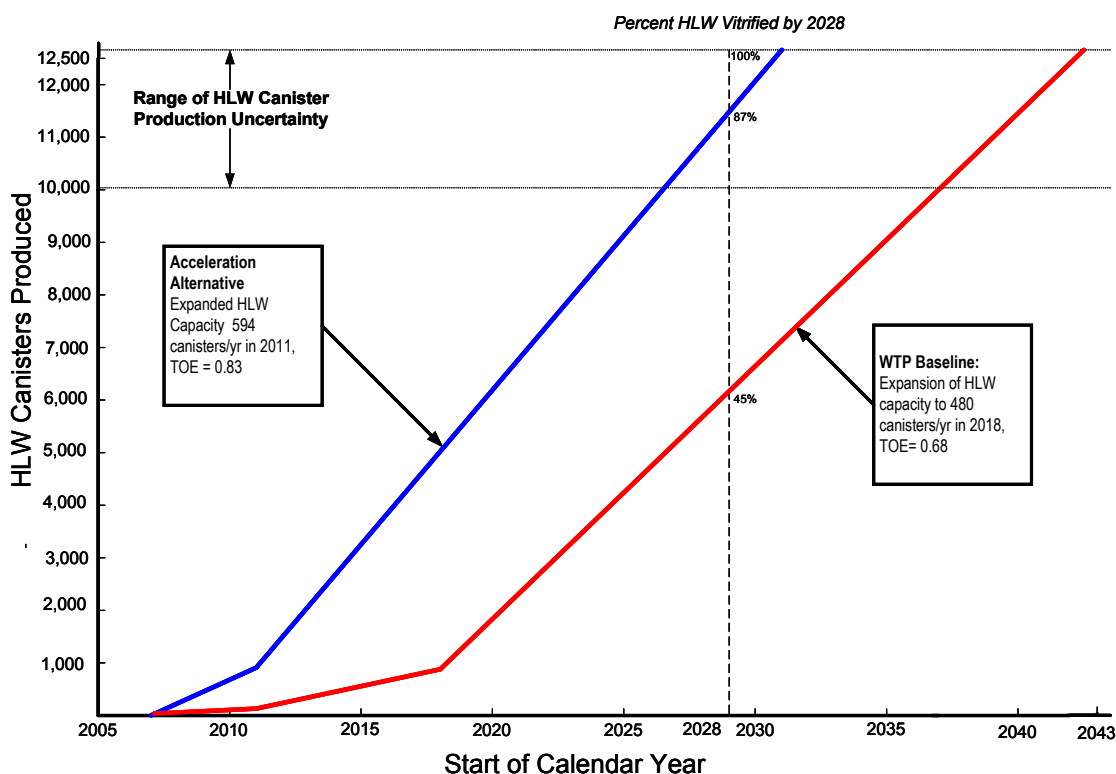
Completing the Hanford tank waste cleanup 20 years early requires focused objectives and a strategy that delivers results. Key goals for this initiative are to maintain the environmental quality of Hanford tank waste cleanup, achieve real near-term progress, accelerate risk reduction, and provide substantial reductions to life-cycle schedule and cost. Our strategy is to deliver one (and only one) WTP, demonstrate tank closures now, aggressively retrieve waste as required to meet accelerated schedules, and demonstrate and deploy parallel non-WTP solutions to treat and immobilize tank wastes. Implementing this strategy requires that we focus our energies throughout the life cycle of the initiative on achieving those objectives. We will limit the inflow of additional wastes into the tanks, develop technical solutions that deliver real progress on each component of the strategy, set aggressive contracting performance goals, continuously drive for improved performance, and stand accountable for meeting our performance goals and objectives without compromising our obligation to protect human health and the environment.

This initiative's key elements and performance objectives are to:

1. *Complete the treatment of tank waste 20 years early, by 2028, using just one WTP.*
Accelerated processing and completion will be achieved by (a) reaching full treatment capacity early in the WTP high-level waste (HLW) and low-activity waste (LAW) treatment facility operations, and (b) by enhancing and supplementing the WTP treatment approaches to increase the net treatment throughput. Completing waste treatment by 2028 requires both technology enhancements to the WTP (such as bubblers to enhance mixing in the HLW melters and steam reforming to enhance LAW throughput) and the successful deployment of alternative non-WTP treatment approaches (described in element 3 below). We estimate that the volume of vitrified HLW produced during the first 5 years of operation could increase as much as ten-fold under this initiative resulting in a substantial acceleration of risk reduction.

Figure 6 contrasts the planned HLW treatment rate with that we project for the accelerated case. Our accelerated HLW approach is projected to complete waste treatment 10 to 20 years earlier than the current schedule due to a combination of (a) deploying high capacity, HLW glass melters at the outset of WTP operations; and (b) deploying improved glass chemistry that provides for higher waste loadings resulting in fewer HLW canisters produced (nearer the low end of the uncertainty range shown in Figure 6).
2. *Start the tank closure process now, 10 years earlier than the current baseline, thereby accelerating risk reduction and significantly increasing tank closures.* Accelerating tank closures provides a means of eliminating risks associated with maintaining open, aging single-shell tanks (SST) (e.g., increased worker and groundwater infiltration-related risks). We have established a target range of closing 60 to 140 SSTs by 2018. For example, closing 140 tanks would support accelerating mission completion to 2025. Our ability to meet the more aggressive closure targets is dependent upon successfully achieving high-accelerated waste treatment rates (as indicated in Figures 6 and 8) as well as successfully deploying double-shell tank (DST) strategies to more effectively utilize DST space; together, these approaches should result in freeing up the DST space required to support our accelerated SST retrieval and closure targets.

Figure 6– Comparison of Planned and Accelerated Cases for Treating HLW in the WTP



The accelerated HLW treatment approach provides a means to complete HLW treatment by 2028 over most of the uncertainty range for the number of canisters projected to be produced. The uncertainty in that number is due to the range of possible tank waste chemical compositions that may be encountered during treatment and their effect on waste loading in the glass.

The first SST closures will provide valuable insights that will enhance our ability to continue accelerated tank closure activities and more rapidly complete the safe closure of all waste tanks. We will initially focus on SSTs that we have already slated for early retrieval demonstrations as well as tanks that we can otherwise demonstrate meet regulatory closure requirements due, for example, to prior radionuclide removal and waste retrieval activities. This initiative will more rapidly integrate risk-informed decision processes into RCRA closure actions by demonstrating that residual wastes can be safely treated and isolated in a manner that complies with the TPA, the Washington Administrative Code, and other applicable laws and regulations governing the treatment and disposal of radioactive and hazardous constituents remaining in any tank residuals. We plan to deploy defense-in-depth isolation techniques to enhance assurance of safe, long-term isolation of any residual contaminants and thereby reduce related risks. Defense-in-depth refers to the deployment of multiple (redundant) engineered barriers to waste dissolution/transport to increase confidence in performance.

- Accelerate waste stabilization by developing and deploying alternative treatment and immobilization solutions that are aligned with the waste characteristics to add assurance that overall waste treatment/immobilization will be completed 20 or more years sooner. The WTP LAW vitrification is a sound treatment for much of the LAW and addresses those wastes containing F-listed (solvent) constituents or other constituents that require thermal destruction or immobilization levels consistent with vitrification. However, the wide

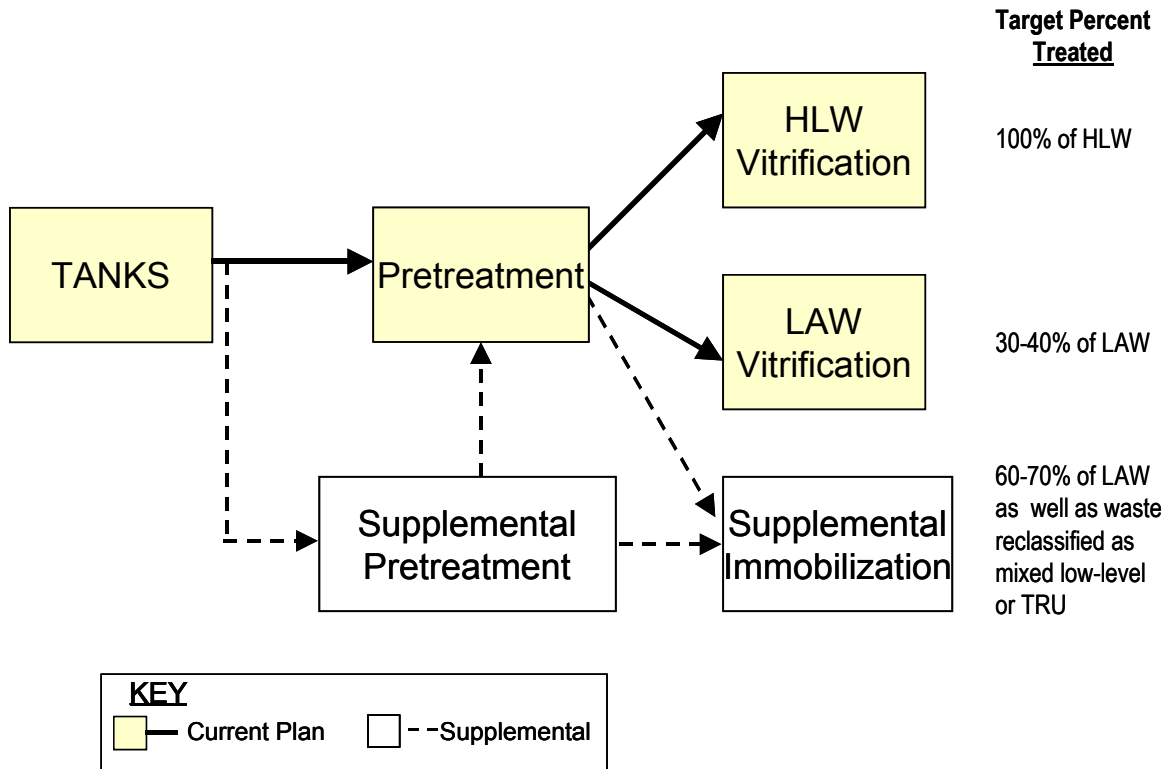
diversity of chemical processes and reprocessing approaches that were used at Hanford has resulted in unique chemical compounds and conditions. This, in turn, leads to some tank wastes having characteristics that are less well suited for the baseline vitrification approach than others, as well as some tank wastes being orders of magnitude less radioactive than others. The current one-size-fits-all LAW vitrification approach can unnecessarily constrain the rates of treatment/immobilization if applied to all non-HLW streams regardless of the radioactive and chemical constituents present in each stream.

We believe the timely deployment of alternative treatment technologies has the potential to significantly accelerate non-HLW waste treatment rates. Some alternatives could provide parallel non-WTP treatment pathways; e.g., for tank waste that can be treated and disposed of as TRU in WIPP. Other alternative technologies under consideration could be used as internal WTP supplements to provide parallel, non-vitrification treatment pathways for LAW that meets performance and regulatory requirements. Some alternatives under consideration, such as steam reforming, may have the flexibility to be used in either capacity. Our plan, therefore, is to selectively deploy alternative technologies to provide treatment aligned to the specific constituents in any given waste. We have targeted non-WTP treatment approaches to treat as much as three-quarters of the saltcake waste and for TRU. The treatment alternatives can be generally categorized as processes that separate high-level waste constituents from other wastes and treatment steps to immobilize waste into forms suitable for disposal, consistent with applicable environmental laws.

Figure 7 outlines our planned approach for deploying alternative treatment technologies to accelerate risk reduction and meet or beat our commitment to complete the tank waste mission 20 years ahead of schedule.

We have identified several alternative technologies that have the potential to either (a) accelerate WTP throughput rates, (b) provide a potentially suitable LAW alternative to glass that could be used for LAW pretreated in the WTP, and/or (c) provide an alternative to WTP treatment for wastes that can be suitably treated and immobilized using non-WTP treatment approaches. We are working with our regulators via the C3T RPP Baseline Opportunities Team to evaluate, identify, and recommend for funding, alternative treatment technologies that meet a, b, and/or c above. Among the technologies currently under consideration for early testing and demonstration are:

Figure 7 – Accelerate Risk Reduction Through Parallel Alternate Treatment



- Steam Reforming** – This well established petrochemical-processing technology has also been effectively used to treat very radioactive commercial wastes. The steam reforming process destroys organics, converts alkali and other metals to stable minerals, gasifies carbon, and reduces nitrates and nitrites to nitrogen gas. It offers a very important opportunity to accelerate risk reduction and mission completion and to also avoid expensive potential capital upgrades to the WTP that could otherwise be required to overcome waste solubility limitations that can limit throughput. For example, our current baseline assumptions presume that, at some time in the future, we will implement effective methods to reduce the waste-loading impacts of sulfates and sulfides in the waste. Steam reforming appears to offer a means to overcome those sulfur-compound related limitations and also provide a potentially suitable alternative to LAW glass. Steam reforming may also be potentially deployed outside the WTP to treat other waste streams such as mixed TRU and effectively deal with waste constituents that require thermal treatment without the need for high-temperature vitrification treatment.
- Grout** – Grouts may offer suitable alternative LAW waste forms for wastes that have already undergone or do not require thermal treatment. Grouts are flexible and can be deployed in combination with other treatment approaches (e.g., with steam reforming or fractional crystallization) under conditions where it may be desirable to tailor the final waste form. We are evaluating the use of custom grout formulations tailored to the specific chemical characteristics of Hanford’s tank-waste and soil conditions.

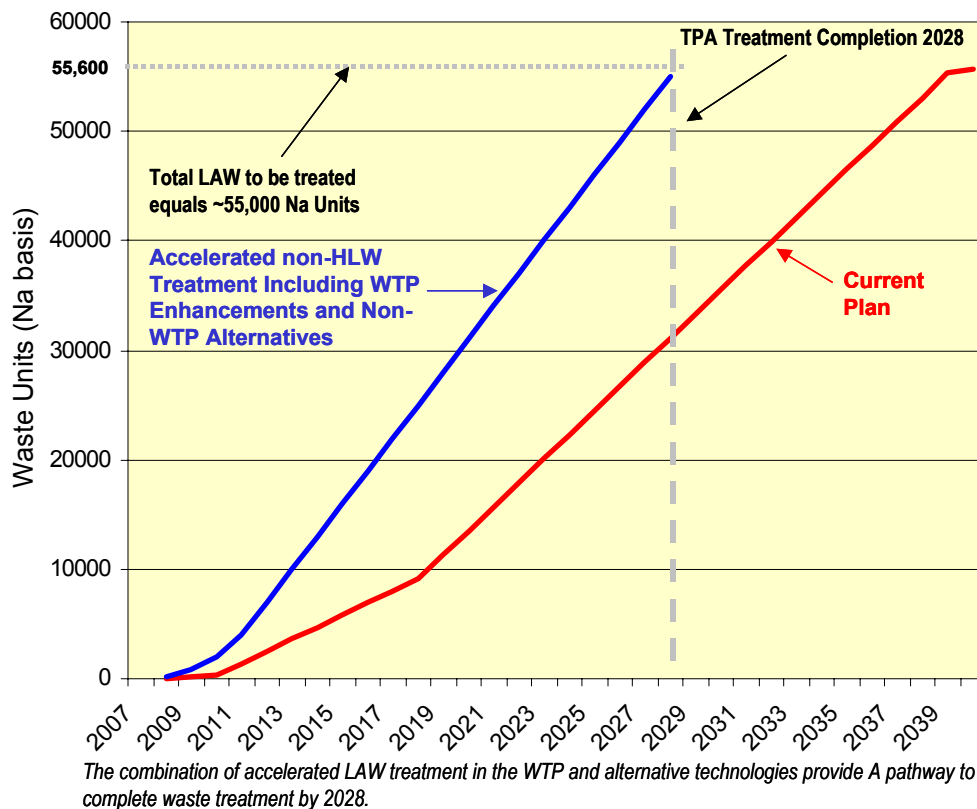
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- **Bulk Vitrification** – Bulk vitrification is a flexible technology that was initially nurtured via DOE science and technology funding that is now used domestically and internationally for radioactive, hazardous, and mixed waste treatment. Bulk vitrification can be carried out in very large containers (e.g., roll-off bins) or *in-situ*. It is a logical supplement to the baseline glass melter approach that can provide many of the same benefits but with more waste chemistry flexibility due to the vitrification vessel being disposed of with each use. We believe that bulk ex-situ vitrification may have the potential to provide a rapid parallel pathway to treat lower-risk wastes, including those wastes requiring thermal treatment and/or those wastes that have chemical characteristics less compatible with our baseline approach. Bulk vitrification could also be used in conjunction with other treatment steps (e.g., steam reforming or fractional crystallization) should the planned technology demonstrations indicate that additional treatment will be required to reach an acceptable final waste form. Bulk vitrification could be potentially deployed in-container, near or in the waste tanks, or with the WTP to accelerate risk reduction by supplementing our core treatment processes.
- **Fractional Crystallization** – Fractional crystallization offers the potential to provide an alternative waste partitioning process and thereby further accelerate waste treatment. The fractional crystallization process separates the bulk salt from radionuclides, thereby reducing the quantity of waste requiring treatment in the WTP. The decontaminated salt waste would be subsequently immobilized via grouting, steam reforming, bulk vitrification, or other immobilization techniques.

The technologies selected after testing and demonstration would be deployed in parallel with WTP operations, with the goal of increasing the combined processing rate such that all treatment is completed by 2028. Figure 8 contrasts our accelerated approach with the planned approach for the treatment of LAW and non-HLW wastes. Figure 8 illustrates that through a combination of increased WTP LAW throughput and non-WTP treatment alternatives, the time to complete waste treatment can be substantially reduced, thereby allowing an earlier completion of tank closures and overall mission completion.

This strategic initiative challenges and transforms the current plan to accelerate mission completion without compromise to our commitment to protect human health and environmental quality.

Figure 8 – Comparison of Baseline and Accelerated Cases for Treating LAW and Other Non-HLW



Rationale

The rate of waste treatment has been the limiting factor in tank farm cleanup projections. The diversity of the tank wastes, from both a chemical and a radionuclide context, suggest a need for deploying treatment approaches that are aligned with the waste constituents and final disposal requirements. This initiative accelerates risk reduction by accelerating tank waste treatment thereby creating the double shell tank space required to accelerate SST retrieval and closure. Uncertainties in the waste characteristics and waste treatment throughputs that can be achieved are offset through the proposed deployment of alternative treatment technologies and alternative LAW waste forms. Together, the three components of this initiative create a viable and fiscally responsible approach for dealing with the wide spectrum of chemical and radioactive constituents in the Hanford tanks in a manner that will enable faster treatment, which will enable faster SST waste retrieval, which, in turn, will enable faster SST closures. Through this strategic initiative, we are proposing a comprehensive solution to protect human health and the environment by achieving real near-term progress, accelerating risk reduction, and providing a sustainable project that delivers accelerated performance to complete the cleanup of Hanford tank waste.

Approach

Our approach to implement this strategic initiative is to focus and incentivize the two major contractors, the WTP contractor, Bechtel National, Inc. (BNI) and the tank farm contractor, CH2M Hill Hanford Group, Inc. (CHG), to drive the project to accelerated rates of risk reduction and work completion. The ORP prime contracts with BNI and CHG are innovative (build on commercial practices) and incentivize the contractors to accelerate cleanup to reduce costs. These contracts are flexible and can be further incentivized to deliver the three component parts of this initiative. The two contractors would test, prove the viability of, and deploy the technologies in a manner that is consistent with their responsibilities and that is fully integrated with our overall strategy and plan to accelerate risk reduction and mission completion. The technologies would be tested and brought to a state of readiness suitable for deployment within the next 2-4 years. The determination of which technologies would actually be deployed will be dependent upon the outcome of those tests; we have provided backup capabilities within the suite of technologies to be tested to add assurance that successful deployment would result from some combination of those technologies.

4.1.3 Strategic Initiative 3 – Accelerate the Stabilization and De-Inventory of Nuclear Materials

Description

In addition to the radioactive waste in the tanks, Hanford's most urgent threats to human health and the environment are posed by its remaining inventories of spent nuclear fuel, plutonium, and other materials in forms that are unstable or currently unsuitable for long-term storage or disposition.

This initiative is aimed at significantly reducing the near-term risk by stabilizing these materials, packaging them into long term storage containers and consolidating them into facilities offering more protection through passive measures to greatly reduce the annual cost to manage the waste and maintain the safety systems.

Rationale

At the end of the Cold War, many of the weapons production lines were shut down with material still in all stages of the production process, leaving Hanford with a sizeable inventory of unstable materials. The safety and security measures in place to protect these materials cost us hundreds of millions of dollars each year. By accelerating the stabilization, packaging and consolidated storage of these materials, we more quickly eliminate the safety and security costs, reduce risk and improve the safety of our workers and the public.

Approach

Spent Nuclear Fuel - About 80% (2,100 metric tons) of DOE's spent nuclear fuel inventory is at Hanford. Stored in water-filled, leak-prone pools at the K-East and K-West basins along the Columbia River when reprocessing was halted in the late 1980s, the fuel is deteriorating. In December 2000, we moved the first fuel out of the K-West basin and into an engineered canister, conditioned it for dry storage, and placed it into the Canister Storage Building on the Central Plateau for safe long-term storage until it can be shipped to the nation's geologic waste repository for disposal. The current baseline, and the TPA commitment, calls for all the fuel, sludge, water, and debris to be out of the K-Basins by July 2007. As part of accelerated risk reduction, we have set a target completion date of September 2006 – 10 months early – and are incentivizing our contractor to meet or beat it by working transition activities in parallel with fuel and sludge removal, and looking for new approaches to basin decontamination and decommissioning.

Special Nuclear Material (Plutonium) - One of the greatest environmental and security risks at Hanford is the approximately 18 metric tons of plutonium-bearing materials in various forms, such as metal, oxides, solutions, polycubes, and residues at the Plutonium Finishing Plant (PFP). These materials must be stabilized using several different processes, appropriately repackaged, and shipped to other locations for reuse, long-term storage, or final disposition. Currently, PFP is mid-way through the stabilization and packaging campaign, which is scheduled to be completed by May 2004. In addition to the plutonium-bearing material stored in the vaults, there is plutonium and other hazardous material that must be retrieved, packaged, and disposed located

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in hundreds of glove boxes and miles of ventilation ducts. Accelerating the removal of the plutonium allows acceleration of the clean out and demolition of the 50 buildings that comprise the Plutonium Finishing Plant. As part of accelerated risk reduction we would:

- Accelerate from 2014 to 2005 de-inventory shipments of Hanford's vault-stored stabilized plutonium to DOE's Savannah River Site, or another secure facility meeting the design basis threat guidance (in this event we could use an existing facility that would be easier and less expensive to protect rather than constructing a new facility). This would further DOE's plutonium consolidation goals for national security, significantly reduce security costs, and allow us to decommission PFP in a more cost-effective and efficient manner since security concerns would be eliminated;
- Characterize, remove, package, and disposition the plutonium and hazardous chemicals held up in equipment, glove boxes, and ventilation systems by 2006; and
- Accelerate the clean out and demolition of approximately 50 facilities to 2009 compared to the currently scheduled 2016, saving \$580 million in lifecycle costs, which includes a \$100 million annual mortgage cost.

Cesium/Strontium (Cs/Sr) Capsules - Hanford's 1,936 cesium and strontium capsules, containing about 130 million curies of radioactivity, are stored in water-cooled pool cells at the Waste Encapsulation and Storage Facility (WESF) on the Central Plateau. The capsules have a high-thermal output and high-radiation dose rate (holding one capsule for just 10 seconds would result in a lethal radiation dose for the average person). The water removes heat and provides radiation shielding. The stored capsules contain about 37% of the site's total radioactivity and have been classified as high-level mixed waste subject to regulation under RCRA. According to the current baseline, the capsules will be transferred to the WTP beginning in 2018 for vitrification and disposal.

- Under this strategic initiative, the cesium and strontium capsules will be transferred from the WESF water pool cells to a secure long-term dry storage facility by 2007. The dry storage configuration will provide conductive or convective cooling, as well as adequate shielding to reduce radiation exposures and ensure safe storage. In addition, dry storage cooling by natural convection or conduction will reduce health and environmental risks by not requiring continuous water-cooling, and will result in a more secure, robust configuration, which would be less costly to operate and safeguard. We will seek to ship the Cs/Sr capsules in this dry storage configuration directly to the national geologic repository. If these capsules do not need to be vitrified, we will realize substantial reductions in risks to the workers and the environment, and reduce WTP operating time and cost.
- The C3T working team found that removing the capsules from wet storage to a more secure long-term dry storage facility would allow for early deactivation of WESF (\$80 million lifecycle cost savings) and would eliminate the need for a capsule-handling facility for processing prior to vitrification (a \$200-\$300 million cost avoidance).

4.1.4 Strategic Initiative 4 -Accelerated Waste Disposal and Source-Term Remediation

Description

In addition to the high-level tank wastes, Hanford has approximately 1,200 individual waste sites on the Central Plateau (burial grounds, cribs, trenches and leak sites), which are potential sources of groundwater contamination that need to be addressed, and in excess of 40,000 drum equivalents of legacy (previously generated) “suspect” transuranic waste (TRU) and mixed low-level waste (MLLW) temporarily stored above ground awaiting permanent disposal. As we proceed with Hanford cleanup (taking down buildings and remediating waste sites), more of these wastes will be generated and will need to be characterized, possibly treated, and disposed.

For the first time in recent history we are disposing of more of this waste than we are generating. The above ground inventory is starting to decrease, but not nearly fast enough. We still have big challenges in terms of planning and managing the infrastructure and logistics surrounding waste management to support accelerated cleanup and risk reduction. In addition, other sites are affected by waste disposal at Hanford and in turn affect us.

Hanford disposes of low-level waste (LLW) and MLLW from various onsite and offsite generators. We also process and certify TRU for disposal at WIPP and are beginning to retrieve suspect transuranic waste buried in the Central Plateau low-level burial grounds. Our waste management operations also treat and dispose of liquid radioactive waste generated during cleanup, including large volumes of contaminated groundwater pumped from plumes beneath the site.

Because our ability to treat MLLW is limited, we are only currently treating and disposing of small quantities of Hanford-generated MLLW, and we are not receiving any MLLW from offsite DOE generators. This has delayed the disposal of MLLW complex-wide, as Hanford is the only DOE site with a permitted MLLW facility for offsite waste.

Due to funding constraints and higher priorities, we are retrieving little suspect TRU. We continue to manage -- versus reduce -- the increasing risk that this unretrieved, suspect TRU waste poses to the environment.

Under this initiative, we will accelerate our MLLW treatment and disposal, accelerate the retrieval of suspect TRU waste from the temporary storage in burial grounds, and accelerate the disposal of TRU to WIPP. For the approximately 800 non-tank farm soil waste sites across the plateau, we will develop a plan to focus on reducing radionuclide source-term risk and optimize the timing and sequence of the remediation of sites. Our highest priority will be waste sites that pose potentially significant risks to long-term groundwater quality. That plan will form the basis for overall Central Plateau remediation that will integrate tank farm, waste site, and facility closure actions. Lastly, we must deal with the need to accept MLLW and limited quantities of TRU from other sites in the DOE complex.

To further support elements of this initiative, we are preparing the Hanford Solid Waste Environmental Impact Statement (HSW EIS) and will issue a draft for public comment in May 2002. As a part of that process, we are evaluating deep, lined mega-trenches for the disposal of

both low level and mixed low level waste. The EIS will provide a suite of options for decision-makers that will support this accelerated waste disposal and provide a basis for additional modern waste management capability at the Hanford Site.

Rationale

Above ground storage is more vulnerable to natural and man-made threats than permanent disposal and incurs significant expense to maintain safety and security. By accelerating the Hanford MLLW and TRU disposal effort, we will reduce our risks, and the costs associated with continued maintenance and surveillance of MLLW and TRU storage containers and facilities. In addition, just like the high-level waste tanks, the other waste sites represent contaminants in the vadose zone that are potential threats to the workers, the public, and the environment. Decisions need to be made on these sites in the same way decisions have been made on those in the River Corridor.

Dealing with our own waste issues may also help pave the way for disposal of MLLW and small quantities of waste from other sites so that they can close and their funding can be made available for cleanup at Hanford and elsewhere. By taking and temporarily storing TRU waste from small quantity sites, we allow them to shut down earlier and at less cost by avoiding the expensive facilities and certifications required to process TRU for WIPP. Since Hanford has the state-of-the-art TRU processing facility and certification from WIPP to process more than 37,000 drums of Hanford suspect TRU, we can easily handle the limited quantities of TRU from these small sites on a cost-reimbursable basis.

We recognize the issue of receiving wastes from other sites is very contentious, not just here but across the entire DOE complex. Nonetheless, no site can be entirely independent. Currently, Hanford is accepting LLW from various DOE sites, and MLLW from the U.S. Navy but not other offsite generators. We have also shipped some wastes offsite and expect to ship more (specifically, we have sent our excess uranium to Ohio and a nominal quantity of TRU waste to WIPP, but we are not currently shipping much TRU to WIPP due to higher priority by Rocky Flats, Idaho and Savannah River). Our spent fuel and high-level waste cannot leave the Hanford Site until the national repository is opened. Our plutonium is destined for Savannah River but it may not leave for some time due to higher priority for plutonium from Rocky Flats and Lawrence Livermore National Laboratory. Some residents of Washington and Oregon are concerned about the balance and timing of waste receipts, particularly considering that little waste is presently leaving the Hanford Site. They are understandably reluctant to support Hanford's acceptance of any more waste from offsite until we are doing more to deal with existing onsite wastes such as the tank wastes and the above ground inventory of TRU and MLLW.

Approach

- Accelerate by 4 years (from 2012 to 2008) the treatment and disposal of about 14,000 cubic meters of mixed low-level waste (7,000 cubic meters currently in storage and 7,000 cubic meters we expect to generate during cleanup over the next six years), leaving essentially no mixed low-level waste in the Central Waste Complex storage facilities.

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- Plan and execute a more efficient and effective reduction of risk on Hanford's Central Plateau by accelerating to 2006 the retrieval of 15,000 drums (of 37,000) of contact-handled suspect transuranic waste from the low-level burial grounds. These drums make up about 70% of the plutonium and other transuranics that were retrievably stored in the Hanford burial grounds after 1970 while DOE worked to open WIPP. Accelerated retrieval and disposal of these drums is consistent with EM's priority of increasing permanent disposal while maximizing near term risk reduction. We would then conduct a risk-based study of the remaining buried suspect TRU waste in order to support a risk-based path forward.
- Increase the shipping rate of TRU waste to WIPP to the point that all generated contact-handled TRU waste will be processed through Hanford's TRU processing facility by 2027, allowing for an accelerated closure 5 years early, saving \$100 million in lifecycle costs.
- Develop a plan to optimize the timing and sequence for remediation of the approximately 800 soil waste sites across the plateau that pose the highest threat to groundwater. That plan, which will be developed by June 2003, will focus on reduction of source-term and will be integrated with Central Plateau tank farm and facility closure actions.
- Finally, by utilizing existing capacity and infrastructure for low-level waste and mixed waste disposal, Hanford will provide significant support for other DOE site closures. For instance, our ability to dispose of Fernald low-level uranium waste and Rocky Flats mixed low level waste (MLLW) can facilitate the closure of these sites, freeing up resources for more EM cleanup. Similarly, Hanford's ability to store, process, certify, and ship TRU waste from small-quantity DOE sites will allow for significant EM cost savings and the accelerated closure of those sites, including the Battelle Columbus' West Jefferson Site.

4.1.5 Strategic Initiative 5 – Accelerate the Decontamination and Decommissioning of Excess Central Plateau Facilities

Description

There are a significant number of major and excess facilities requiring disposition on the Central Plateau. These major facilities include the massive chemical processing facilities or “canyon” buildings, which present special challenges and risks because of their sizes and significant radionuclide inventories. Nearly 900 excess facilities located on the Central Plateau must either be maintained to preserve structural integrity or removed to prevent unacceptable safety risks and migration of potentially hazardous substances to the environment. Clearly, the way to reduce risk and lifecycle costs is to decontaminate and decommission all excess facilities.

This initiative is aimed at the development of a plan for disposition of the canyon facilities, using the U Plant Canyon and associated structures as the model for future canyon disposition activities. This initiative also will also integrate the disposition of significant high-risk (high potential to continue leaking into groundwater) waste sites (in the U Plant vicinity) that are key to protecting the Hanford Site groundwater and the Columbia River. In addressing the U Plant facilities and nearby waste sites, we will disposition a significant contiguous block of the Central Plateau, which will serve as a pilot for eventual disposition of other large facilities and land areas within the Central Plateau.

We have expanded this initiative from its original inception to address the balance of excess facilities noted above. We will phase our activities and apply successful lessons learned from the U Plant Canyon disposition.

Rationale

Rather than completely demolishing the canyon building and disposing of the resulting waste in the Environmental Restoration Disposal Facility (ERDF), we propose to utilize the robust lower-level structures of the canyons to compliantly dispose of wastes from the facilities themselves and potentially of other compatible Hanford Site waste. Once filled with waste, we would collapse the outer walls of the facilities to reduce the elevation profile and cover the structure with a protective environmental cap. The use of the canyon facilities for waste disposal has a potential savings of up to \$1 billion and will greatly reduce the amount of disposal space needed in the ERDF.

DOE and its regulators agree that disposition of the canyon facilities is necessary to protect human health and the environment from the hazardous substances in the facilities and the underlying soils. However, since this initiative has not been previously demonstrated, we want to proceed prudently to assure protection of our workers as well as protection of the public and the environment. The contamination levels at the PUREX, B Plant, and Reduction Oxidation (REDOX) canyon facilities are significantly higher than the others, making remediation more complex. We plan to use the U Plant canyon facility as the pilot for remedial action for the other four canyon structures.

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There are 25 waste sites located near the U Plant canyon that, because of their close proximity, will be integrated with the canyon disposition effort. Also located near U Plant are six other waste sites, that if included for disposition, will allow a large contiguous piece of the 200 West Area to be dispositioned as part of this initiative. These waste sites are a subset of the 1200 Central Plateau waste sites addressed by Strategic Initiative 4. Some of these waste sites have relatively high uranium/technitium inventories and are potentially significant contributors to groundwater contamination. We propose disposition of these waste sites as part of this initiative to protect the groundwater and the Columbia River and to remediate a large portion of the 200 West Area.

As for the remainder of the 900 or so excess facilities, the sooner they can be dispositioned, the lower the total costs. We are currently maintaining and continuing our surveillance of these facilities at a minimal level. The longer they remain, the more they deteriorate, the more they put our workers and the environment at risk, and the more they will cost.

Approach

The current baseline defers the actual disposition of the canyon buildings to beyond 2025. As part of the accelerated activity, we will accelerate the completion of the U Plant canyon disposition to 2010 – nearly 20 years early – and coordinate it with accelerated disposition of the U Plant waste sites.

This initiative will include and integrate: the completion of the CERCLA ROD for disposition of the 221-U Canyon and ancillary facilities in 2003, implementation of remedial actions for 31 adjacent waste sites following completion of the Canyon and 200 Area Remedial Action Program CERCLA RODs (currently scheduled for ~2007), disposition of the 221-U Canyon ancillary facilities (dismantled, razed, and/or disposed in place), consolidation of wastes from 221-U Canyon and ancillary facilities within the canyon (cell and in-canyon space will be utilized as appropriate), reduction of the profile of the 221-U Canyon down to the deck level, placement of a disposal barrier over the razed 221-U Canyon, ancillary facilities, and adjacent waste sites, and finally, the construction of additional barriers over significant waste sites not within the canyon barrier footprint to protect the groundwater.

The disposition activities described above will be completed by 2010. The resulting disposal area will then require minimal maintenance and surveillance, and will be included in the scope of Hanford Site long-term stewardship.

We will finalize and submit an expanded initiative to address the balance of excess facilities as resources become available. This will be proposed in 2003 as part of the fiscal year 2005 budget request.

4.2 BUSINESS MANAGEMENT

We fully recognize that our success in accelerating the cleanup and closure of the Hanford Site and delivering on each of the commitments made in this plan is largely contingent upon our ability to re-engineer our business management approach and overcome the problems that have historically hindered cleanup progress across the weapons complex. We have focused on the following eight key business management strategic approaches that have proven to be critical to success across the DOE complex:

1. Assign DOE employee responsibilities appropriate to their federal roles.
2. Align contracts and contractor incentives to successfully achieve Hanford cleanup goals.
3. Streamline requirements to enable success.
4. Implement proven project management approaches and principles.
5. Identify and manage programmatic risks.
6. Streamline safety and health management processes.
7. Improve financial management approaches.
8. Streamline Hanford infrastructure as we shrink the site.

These business management approaches are discussed in Sections 4.2.1 through 4.2.8 below.

4.2.1 Federal Roles and Responsibilities

The Top-to-Bottom Review Team and others have found EM's administration of contracts and oversight of contractor work to be inconsistent, ranging from excessive involvement to inadequate surveillance for fixed-price contract work. Among lessons EM has learned is that we need to clarify DOE's oversight of work to eliminate confusion and increase effectiveness. Accordingly, we are reviewing the federal roles and responsibilities relative to the contract administration and oversight process. We will improve contractor oversight by establishing goals and work monitoring processes, identifying formal and informal oversight practices, and establishing technical competencies for government monitors.

The execution of this plan requires alignment of our federal and contractor roles and responsibilities. DOE is the site owner and ultimately bears the responsibility for success or failure. The unique types of expertise, qualifications, and personnel levels to carry out the cleanup mission require the effective use of contractors and contractor personnel and equipment.

To be successful, we need the expertise and commitment of many individuals and organizations. Key players in the implementation of this management plan include the Assistant Secretary for Environmental Management, the federal Hanford Project Managers, federal Hanford Employees and the site contractors responsible for performing cleanup.

Assistant Secretary for Environmental Management. The Assistant Secretary for Environmental Management serves as the senior government official for the Hanford Project. Accelerated cleanup of Hanford requires integration actions and timely decisions by a number of different DOE organizations, which the Assistant Secretary can facilitate. This position also has access to the Secretary of Energy and has the authority to ensure these issues are resolved. The Assistant Secretary for Environmental Management's responsibilities under this plan are to:

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- Advocate for project strategy and required resources consistent with this plan.
- Resolve issues and requirements that involve HQ level or policy based decisions, multiple offices and/or multiple sites.
- Forward recommendations on issues that must be resolved at the Secretarial level.
- Track progress against cost and schedule and determine areas where intervention or assistance may be required.
- Hold the Hanford Project Managers accountable for performance.
- Chair routine meetings to assess the status and ensure progress of DOE support to accelerated cleanup at the Hanford Site.
- Provide summary evaluations to the Under Secretary or Deputy Secretary.
- Review quarterly updates from the Hanford Project Managers.

Hanford Project Managers. The Manager of the DOE Richland Operations Office and the Manager of the Office of River Protection serve as the federal Hanford Project Managers. The ORP Manager is the Project Manager for tank waste programs, while the RL Manager is responsible for the balance of activities at Hanford. Responsibilities for these Hanford Project Managers include the following:

- Assure mission completion through effective management of federal and contract resources.
- Establish the scope, schedule, and funding requirements for the project and ensure implementation to be consistent with these requirements.
- Set performance standards and metrics for the conduct of work.
- Partner with regulators to complete cleanup within the TPA framework.
- Maintain productive relationships with Tribal Nations and stakeholders.
- Create an environment for contractors to work safely and efficiently.
- Provide project updates and otherwise support routine meetings chaired by the Assistant Secretary for Environmental Management.
- Provide oversight and constructive feedback to contractors.
- Work with DOE-HQ and other affected sites to assist in integrating project needs with the requirements of other programs and sites.

DOE Hanford Employees. DOE Hanford employees have the following responsibilities:

- Define end points and the requirements to be met for each program element.
- Develop and implement the acquisition strategies required to procure the best contractor talent and align the contract objectives and rewards with the appropriate requirements.
- Assure the timely and effective delivery of all government-furnished items and services (GFI/S) required to carry out each element.
- Provide effective contract oversight that assures continued alignment with the applicable requirements, rewards outstanding performance, and takes timely corrective actions when and if required.

Human Resource Management. At Hanford, we are conducting a comprehensive Human Capital Initiative that includes establishment of a demonstration project. We will assess each component of our federal personnel system and demonstrate new approaches for pay administration, rewards and recognition, and performance management. The overall goal is to establish a new system for Hanford federal staff to better accomplish accelerated cleanup by injecting new tools for motivating employees. The essence of the demonstration project will be to connect pay recognition and assessment to performance and learning; i.e., the more an employee learns through experience and study, the better the performance and the more impactful the results. Additionally, the new system and its processes need to enable a “high energy” work environment, where the employees stretch their abilities and gain experience, skills, and credibility. The components of the demonstration project will be developed by the year end and will run for 1 year. A decision on whether or not to implement the program will be made in early 2004.

4.2.2 Contract Management

Accelerating cleanup requires improvements in both our overall acquisition strategy and the approaches used to manage contracts. We must improve our use of objective performance incentives, decrease subjectivity, minimize encumbrances and interfaces, and eliminate nonvalue-added requirements. In this spirit, we will endeavor to accomplish the following:

- Improve the quality of our contract solicitation processes.
- Achieve clarity in our contracts with respect to the contract workscope, applicable regulatory requirements, and, to the extent possible, quantitatively defined end points. We will incorporate risk-based approaches when we cannot provide quantitatively defined end points.
- Clearly identify the nature and extent of uncertainty and risks and align those with the acquisition strategy and contract structure. We will require contractors to identify and manage risk. The contractor's risk management process will be requested in the Request for Proposal and formally evaluated as part of the contractor selection process.

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- Increase emphasis on real risk reduction by focusing contractor fees on key end points rather than intermediate milestones and by eliminating the use of subjective performance measures.
- Focus on increasing the use of "commercial contract formats" whereby we translate complex DOE orders and requirements into clear statements more easily understood by the private sector.
- Develop clearer, more predictable processes for DOE contract administration and work oversight, and incorporate those requirements into the contract.
- Improve our contractor oversight, including work-monitoring practices, while also ensuring the technical capability of government monitors to carry out contractor oversight responsibilities.
- Effectively integrate our contract management processes with corresponding processes for project management, safety oversight management, and financial management.
- Establish proactive self-improvement processes to detect, measure, analyze, and provide constructive feedback.

We will take the steps necessary to further improve our contracting practices including revising performance measures, revising contract incentive and reward structures, and if necessary, renegotiating or terminating contracts that are not aligned with desired outcomes. We will address existing contracts with the presumption that our contractors are capable of accomplishing more risk reduction than their present contracts include.

We have already been very aggressive in converting major Hanford EM contracts into performance-based contracts. This has resulted in outcome-oriented statements of work, performance incentives that strive for better results, and reductions in contractual requirements. However, to achieve the accelerated cleanup target of 2035, we must review and restructure contracts, as necessary, to encourage further acceleration of cleanup following the principles set forth above.

We have implemented a comprehensive acquisition management system to better implement performance-based contracting, streamlined oversight, and a disciplined process to ensure value-added contractor requirements are established. We will aggressively deploy "best-in-class" business practices to engender continuous improvement of the acquisition management system and result in prime contracts that foster accelerated cleanup. As our enhanced business management practices and strategic initiatives take hold, we will review the possibility of reducing the number of prime contracts to cut down on interfaces and redundancy and improve integration. In the interim, key specific contracting actions are to:

- Complete review of existing major contracts, identifying changes required to align with results of the "Top-to-Bottom" Review.
- Renegotiate performance incentives to reflect accelerated cleanup objectives.

- Award River Corridor contract.
- Complete River Corridor contract transition to new contractor.
- Award new Central Plateau contract and new tank farm contract.
- Review possibility of reducing the number of prime contracts on-site.

4.2.3 Streamlining Requirements

We have instituted a rigorous requirements management process that provides the basis for developing the necessary processes and procedures for our federal staff to efficiently and effectively complete their assigned work. This process also provides for the elimination of unnecessary or nonvalue-added contractor requirements. Our goal is to ensure that we establish clear expectations of performance and quality of work, and that these expectations are implemented and attained through performance based contracts for which the contractors are held accountable.

For example, collaborative DOE/contractor efforts have resulted in 34 DOE directives being removed from the Project Hanford Management Contract and 30 additional directives being slated for further evaluation and possible deletion. This effort removed requirements that did not apply or were redundant with other contractual requirements, replaced 4-digit orders with 3-digit orders, clarified requirements to make applicability to Fluor Hanford, Inc. (FHI) work and implementation more easily understood, and added local requirements to facilitate integration across the Hanford Site.

As a follow-on effort, FHI has initiated the next step in the requirements reduction initiative entitled "Management System Realignment Project" (MSRP). This project will flow down the reduced requirements to the implementing procedures at the company and working level. This will be done by streamlining requirements in management system documentation, minimizing self-imposed requirements and enabling the elimination of low value work. The FHI document structure is also being streamlined to eliminate intermediate and redundant procedures that add confusion and inefficiencies at the working level. The goals of the MSRP are to reduce the approximately 650 company level policies and procedures to 325 by June 2002 and reduce the approximately 7500 lower level work procedures to 4500 by September 2003. To date FHI has eliminated numerous company-level documents and reduced the seven Standards/Requirements Identification Documents to one. Similar requirements reduction efforts have been completed for the other Hanford Site contractors including Bechtel Hanford Inc.; Battelle Memorial Institute; CH2M Hill Hanford Group; and the Hanford Environmental Health Foundation. Working collaboratively with DOE-HQ, the minimum necessary set (61) of DOE directives has been incorporated into the River Corridor Contract Request for Proposal. We are also working with DOE-HQ to develop a model contract for the Pacific Northwest National Laboratory, which will incorporate "best-in-class" standards rather than specific DOE requirements to the extent possible.

In addition to reducing unnecessary requirements, we are identifying more effective means of implementing those requirements that are applicable. For instance, the Hanford authorization

basis strategy for 10 *Code of Federal Regulations* 830 will reduce the number of Documented Safety Analysis from 30 to 12-15 in the case of RL and from 6 to 2 in the case of ORP.

In the spirit of reducing unnecessary and nonvalue-added requirements, we no longer submit the Departmental Inventory Management System (DIMS) quarterly reports. This action reduced the number of applicable DOE directives in the solicitation for the River Corridor Contract by six. We realized other efficiencies by reducing the need for high security “Q” clearances, and accounting and reporting of classified information.

4.2.4 Project Management

Over the past 2 years, we have continued to transition from funds management to project baseline management as a fundamental precept in the way that Hanford projects are managed. We have established a structured and disciplined approach to managing the baseline, addressing change issues through a formal change control process, and maintaining configuration control. We have prepared and implemented a document hierarchy of project and contract management plans to manage cleanup in an effective manner. These plans start at the strategic level and progress in project detail to the project execution level.

Upfront Work Planning. We are putting management systems into place to provide the structure, plans and procedures to manage the large, complex overall Hanford Project with rigor and discipline. We are taking action to improve our upfront understanding and planning of work, to improve contract administration and work oversight, and to reduce or eliminate work that does not result in reduced risk. We are applying the project management principles set forth in DOE Order 413.3, *Program and Project Management for the Acquisition of Capital Assets*, to all of our project management activities.

Both RL and ORP have separately established integrated baselines for their respective workscope of the Hanford Site cleanup and we are currently managing site contractors with regard to progress against those baselines. Over the next 18 months we will incorporate baseline changes consistent with our acceleration initiatives and integrate the separate baselines into one overall Integrated Hanford Site Baseline with a 2035 completion date. The key milestones associated with the development of the Integrated Hanford Site Baseline include the following:

- Reaching agreement with our regulators on the assumptions and implementation costs and schedules for the five strategic initiatives and the other Targets of Opportunity being evaluated under C3T by August 1, 2002.
- Working with our regulators to develop a top-level Hanford Site schedule and work breakdown structure (WBS) by January 2003. This schedule would be at a summary (PBS) level; it would be based on successful implementation of the five strategic initiatives and a 2035 completion date; it would include additional acceleration plans identified as part of the C3T Targets of Opportunity evaluations; and it would consider the sequence and logic ties among the RL and ORP cleanup activities.
- Using the top-level integrated schedule and WBS, revise and integrate the current RL and ORP Hanford baselines into the single Integrated Hanford Site Baseline by January 2004.

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This baseline will reflect accelerated site cleanup activities that will complete the cleanup of the Hanford Site by 2035, with provisions to further accelerate the cleanup to 2025.

The Integrated Hanford Site Baseline development will include the following activities:

- Developing detailed work descriptions and defensible cost estimates down to the task level.
- Placing the Integrated Hanford Site Baseline under a formal change process (configuration control).
- Defining and controlling key project and contract interfaces.
- Effectively measuring project performance and taking timely corrective actions for problem areas.
- Streamlining safety, health, and environmental and quality assurance programs to ensure compliance with those requirements necessary to the safe and effective completion of contract milestones.
- Identifying and managing activities on the critical path, along with key interface points, constraints, decision points, and milestones to assure continuity of progress.
- Openly and effectively communicating project activities with project participants, stakeholders, Tribal Nations, regulators, and the public.

As we move forward with the River Corridor contract and the operation of the WTP, we will vigorously implement our baseline project management approach. We anticipate the need for a fundamental transition in the DOE staff discipline mix to more effectively manage our performance-based contracts in accordance with the principles and objectives set forth above.

Performance Monitoring and Reporting. Performance monitoring and reporting will occur at several levels in the execution of our strategic initiatives and will focus on key performance data to demonstrate clear progress on accelerating cleanup. We will incorporate performance data requirements into contracts to use in contractor reporting to DOE, and in DOE field reporting to DOE-HQ. Performance against requirements will also serve as a basis for DOE and contractor staff accountability.

At the contractor project manager level, the contractor will report and review performance monthly. Variances will be addressed and corrective action will be required for performance below expectations. Status of cost and schedule will also be reviewed based on an earned value system, which will effectively integrate work scope with schedule and cost elements. Likewise, cost and schedule variance will be reported and corrective measures will be instituted as appropriate. The basis of these reviews will be an approved integrated baseline that provides firm cost and schedule projections for the acceleration initiatives, as well as logic ties with other site activities. Other relevant information related to health, safety, and environmental performance will be reviewed and corrective measures instituted. The contractor will issue

monthly performance reports to DOE to document performance against requirements and other expectations.

Similarly, performance monitoring at the senior field management level will occur on a monthly basis. These reviews will focus on issues and issue resolution, be based on performance, trends, and other factors potentially affecting the Hanford Site Five-Year Accelerated Cleanup Metrics. The reviews are designed to assess whether the data actually reflect the true execution picture, or whether key trending data indicate a basis for concern, or whether there are other larger site issues emerging that could impact progress of the cleanup. We will maintain a commitment log to document and track key management commitments that are agreed to in these reviews.

We will continue the Quarterly Management Reviews with DOE-HQ management and staff. These reviews will follow the prescribed format which includes reporting against management commitments (to be based on the Hanford Site Five-Year Accelerated Cleanup Metrics), cost and schedule reporting (earned value); variance analysis; corrective action tracking; environmental, health and safety metrics and performance analysis; status of change requests (configuration management); trending data (leading and lagging indicators); and issue identification and resolution. We will provide the status of milestones contained in the Performance Management Plan for the Accelerated Cleanup of the Hanford Site. We will continue and increase the use of earned-value as a performance metric in our major contracts.

We will continue to update the detailed Hanford Site project data on a quarterly basis, making it available through the Integrated Planning, Accountability, and Budgeting System (IPABS). These data are comprehensive in terms of project accomplishments, earned value analysis, and Environmental, Safety and Health metrics. They are readily available to DOE-HQ, Office of Management and Budget, and Congress. Other performance monitoring processes, either in place or planned, include:

- TPA Milestone Reviews: On a quarterly basis, we review all projects contained within the regulatory framework of the TPA with the regulators in an open forum. Although key performance metrics are provided during the review, the primary focus of these reviews is to assess progress toward meeting TPA milestones. These reviews will continue.
- Annual Scorecard: DOE will prepare an annual scorecard that is a one-year snapshot taken from the Hanford Site Five-Year Accelerated Cleanup Metrics. At the end of the fiscal year, DOE will evaluate progress and report results on the scorecard.

Performance Metrics. Our Hanford Site management team is accountable to deliver on our commitments to accelerate site cleanup and reduce risk while maintaining the quality of the cleanup. One of the current mechanisms to ensure accountability is the Tri-Party Agreement. We will continue to require our DOE staff and site contractors to comply with the Tri-Party Agreement and conduct monthly Tri-Party Agreement progress review meetings with the regulators.

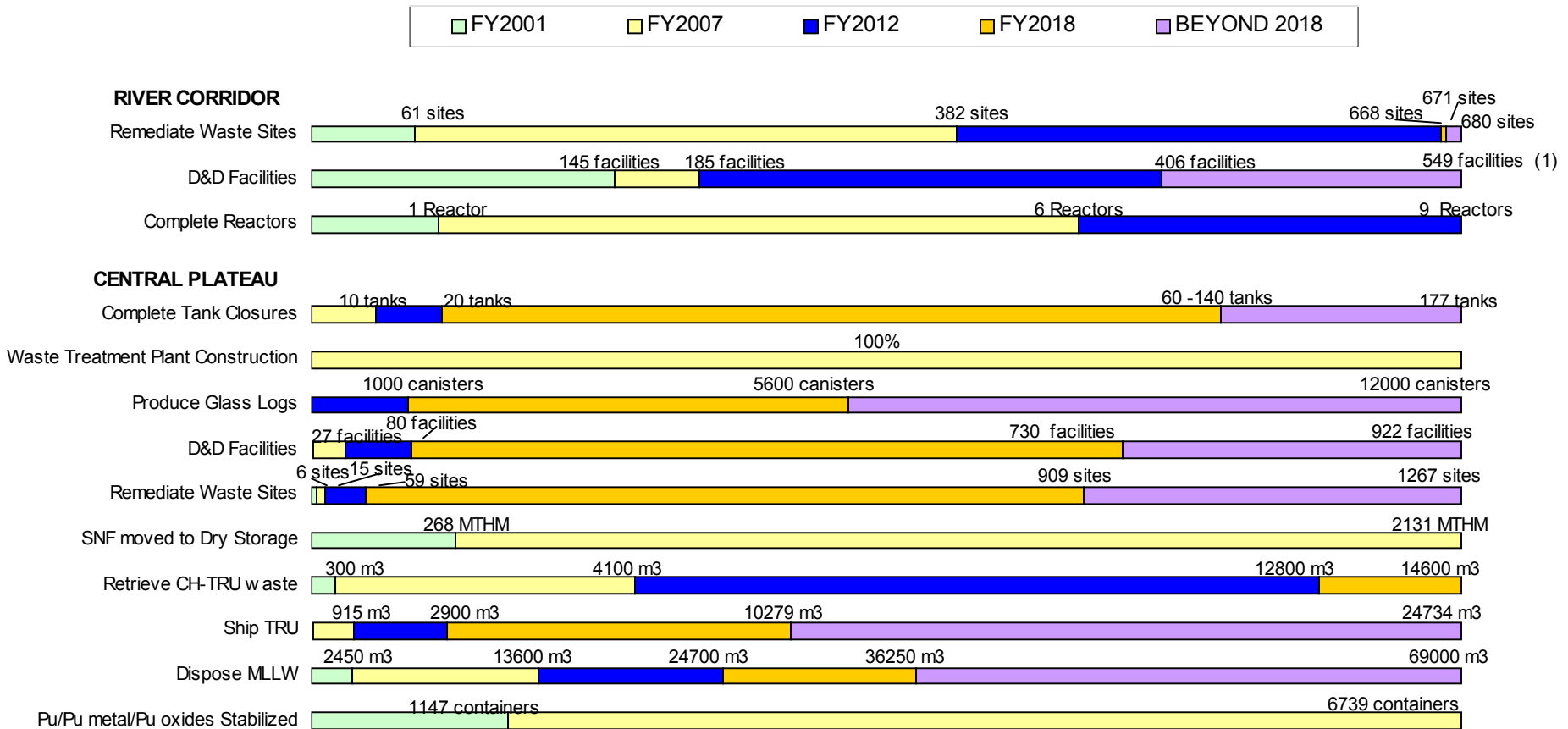
The key site accelerated cleanup metrics are shown on Figure 8, “Hanford Site Lifecycle Accelerated Performance Metrics.” This figure illustrates the lifecycle endpoints and expected performance at selected points in time up to 2035. Figure 9, “Hanford Site Five-Year Accelerated Cleanup Metrics,” is a five-year snapshot of the same metrics on the lifecycle chart.

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The Hanford Site Five-Year Accelerated Cleanup Metrics will be used as a management tool to assess both current and near-term impacts that could affect completion of cleanup by 2035 and will be included in the IPABS. They will either meet or exceed performance required by the Tri-Party Agreement. We will align performance incentives and contract milestones with the Hanford Site Five-Year Accelerated Cleanup Metrics and subject them to field baseline change control process so that DOE must approve any changes to them.

Configuration Management and Change Control. Our management plans, key planning documents, schedules, and designs will be governed by configuration management and change control. The mechanism to identify those changes, evaluate the impact, agree to changes, and document the results will be the Configuration Control Process. The Configuration Control Process for the strategic initiatives will start at the project manager level; either from the contractor project manager or the DOE project manager. As candidate changes are identified, they will be considered by the appropriate Change Control Board, which has responsibility for reviewing and approving or rejecting change requests. Depending on threshold values or other considerations, approval by both contractor and DOE Change Control Boards could be necessary.

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Figure 8. Hanford Site Accelerated Performance Metrics.



Under Construction

Note 1: Facilities and sites remaining after 2018 support Pacific Northwest National Laboratory operations and affected waste sites

Figure 9. Hanford Site Near-Term Performance Metrics.

Remediate Waste Sites
D&D Facilities
Complete Reactors

CENTRAL PLATEAU

Complete Tank Closures
Waste Treatment Plant Construction
Produce Glass Logs
D&D Facilities
Remediate Waste Sites
SNF moved to Dry Storage
Ship CH-TRU
Dispose MLLW
Pu/Pu metal/Pu oxides Stabilized

4.2.5 Programmatic Risk Management

Programmatic risks can be generally categorized as 1) risks associated with uncertainties in cost, schedule, and scope; 2) risks associated with regulatory and institutional uncertainties; and 3) risks associated with our technical capability to achieve project cleanup goals. We have identified and listed uncertainties for each Strategic Initiative in Appendix A. Hanford Site cleanup programmatic risks are managed at the contractor, project, and senior DOE levels. Our programmatic risk management approach is focused on identifying, analyzing, prioritizing, and mitigating these three overall categories of programmatic risks as discussed below. We will use a crosscutting risk management spreadsheet to monitor management of programmatic risks. We will also develop risk mitigation plans for all high-priority risks to document how we will avoid or mitigate the effect on schedule, technical performance, or cost. More specific crosscutting approaches to each of the three principal categories of programmatic risk are briefly discussed below.

Cost, Schedule, and Scope Risk Management

We have several parallel efforts currently underway to reduce programmatic uncertainty and risk. For example, we are developing an integrated Hanford Site cleanup schedule to determine and manage the overall site critical path to closure. We are developing a Central Plateau decision strategy that will be overlaid on the site schedule to see exactly where key decisions have the potential to interrupt the critical path cleanup activities. We will establish organizational and individual responsibilities at the federal and contractor levels to align our total workforce with the cleanup goals we have established. We will hold monthly meetings with key federal and contractor personnel to identify and maintain a focus on resolving the high-impact issues. Based on DOE staff and contractor input, we will continually identify key issues and assign responsibilities and monitoring points to ensure successful issue resolution. Minimizing our overall risk posture may require re-sequencing activities, performing work more efficiently, aligning our business practices, improving contracts and incentives, making tough decisions, and in some cases accepting some technical risk to gain the benefit of more advanced cleanup and waste processing approaches and technology than would have otherwise been used.

There is programmatic risk associated with meeting the accelerated cleanup schedule resulting from uncertainty in the logical progression of work and the interdependence of many of these accelerated task activities. Understanding and taking actions to reduce the uncertainties on critical path activities is important to reducing schedule risk. For example, tank waste retrieval, processing and waste tank closure are clearly on the critical path to a 2035 cleanup. We will conduct accelerated tank waste retrieval and closure demonstrations to reduce this uncertainty. Additionally our business practices, specifically our contracting approach, will reward effective management and success on critical path activities. We will effectively manage and track physical progress, and use proven project management tools, such as earned value reporting. Figure 3 depicts key activities on the critical path for achieving a 2035 cleanup.

Regulatory and Institutional Risk Management

A major risk to acceleration of Hanford cleanup is the fact that many key regulatory decisions have yet to be made. Examples include the definition of end state cleanup levels for the Central Plateau points of compliance, closure requirements, long-term land usage, monitoring and surveillance requirements, and consensus on groundwater protection and management.

With the number of regulatory and other decisions that we and our regulators must make – and the consequences that these decisions will have on cleanup - regulatory risk is high. DOE and our regulators are committed to continuing the open collaborative process, advanced by the C3T effort, and working together to resolve the major open questions that still remain – in particular with respect to the Central Plateau. To achieve a 2035 cleanup, it is critical that we make all major decisions affecting Central Plateau cleanup as soon as possible to keep decision making off the “critical path” -- to ensure that the groundwork is done and decisions made long before they could hold up physical progress.

Knowing when we must make key decisions and taking the necessary actions to support those decisions represent our proactive approach to managing programmatic risk. Additionally, we will provide close coordination of RCRA and CERCLA cleanup actions (such as closure of tank farms and remediation of adjacent waste sites) to ensure consistency of approach and protection. Similarly, we will implement groundwater protection, infrastructure and site services planning, final institutional controls, and final land use planning using a more holistic approach and understanding of the entire Central Plateau, resulting in greater consistency and cost and schedule efficiencies. In addition we will work with our regulators on modifications of existing permits or the acquisition of new permits to implement proposed value-added new approaches.

As a means to reduce the programmatic risk inherent to establishing and implementing this aggressive cleanup plan, we must create a proactive regulatory strategy with well-defined decision points. The C3T effort is already providing better definition of key decisions. Therefore, we have agreed with our regulators that the C3T process, and in particular the leadership of the “Gang of Four”, will continue. We will continue this effort to ensure all decisions can be made early and in a manner to preserve the quality of the cleanup while allowing innovation and efficiency to reduce cost and schedule.

Technical Risk Management

Managing the inherent technical uncertainties associated with accelerating cleanup will require us to address difficult issues internal to Hanford. While we have a sound understanding of many technologies and technical approaches needed to succeed, we also face numerous technical challenges and uncertainties, especially uncertainties related to technology needed to accomplish the cleanup of the 618-10 and 618-11 burial grounds, to address our TRU cleanup, groundwater, and to safely and cost-effectively retrieve, treat, and dispose of potentially problematic tank wastes. Because we are just beginning to define some elements of our technical approach and deal with the resulting realignment of tasks down to the individual project level, many risk assessment and management aspects of this plan are in their initial stages. We will work with our regulators to conduct demonstrations, where appropriate, to prove the viability of alternative technologies and processes.

Key areas of technical uncertainties include our ability to successfully carryout the following on an accelerated schedule:

- Retrieval, treatment, packaging, and disposal of remote-handled waste;
- Final groundwater protection actions (including remediation, source control, monitoring, and communication);
- Coordinated remediation and closure actions throughout the Central Plateau;
- Enhanced WTP throughput capability;
- Alternative waste forms for low activity tank waste; and
- Tank retrieval and closure criteria.

4.2.6 Streamlined ES&H Management

We need to better manage and streamline our safety and health management systems in order to enable accelerated cleanup, reduce risk and lower Hanford's lifecycle costs. Our current safety infrastructure represents a significant portion of ongoing operational costs. It was designed to support a mission of forward-engineered, high-hazard, long-life facilities. It requires significant revision as the Hanford mission evolves to decontamination and decommissioning (D&D). Our focus in revising the safety management systems will be increased emphasis on Integrated Safety Management implementation. This will ensure implementation of adequate controls commensurate with the hazards of the work, therefore striking an appropriate balance between accelerating cleanup and reducing risk. Critical to balancing accelerated cleanup and risk is performance monitoring – measurement and assessment. We therefore need to improve our performance monitoring and assessment systems. Elements of this improvement involve better integrating safety and operational oversight, effective and efficient implementation of the new nuclear safety rules, and tailoring and streamlining requirements to those that are necessary. We are working these initiatives in conjunction with the Executive Safety Conference initiatives.

Contractor Oversight. We have established a comprehensive contractor oversight to include the full scope of contractor performance, not just safety and health. Our approaches provide the framework, flexibility, and processes to define how we intend to implement the “requirements, performance, and risk-based oversight systems” for all of our prime contracts. This framework provides a consistent basis for developing an annual oversight plan that specifically identifies what requirements will be considered, the oversight approach, resource requirements, and resulting formal assessment and surveillance activities. This will be formally accomplished and documented for each major prime contract. We also provide the flexibility to reduce oversight when there is excellent contractor performance. Based on feedback processes, the oversight process will be tailored to the maturity of contractor management systems. We are revising contractor oversight processes in accordance with the recommendations of the “*Opportunities for Improvement: A Review of Safety Management at the Department of Energy*” (Reyes) Report. Concepts being incorporated into our oversight activities include:

- Using contractor Integrated Safety Management performance measurement systems to determine the right level of oversight, similar to the approach used by the Nuclear Regulatory Commission. We will also use information from the contractor's self-assessment and Voluntary Protection Program assessments, and will utilize International Organization for Standardization (ISO) 14001 concepts to identify problem areas.

- Using an integrated planning process that coordinates and schedules contractor, field office, DOE-HQ, and other oversight to eliminate redundancies, share results, and ensure consistent corrective actions. Assessment results will be consolidated and analyzed annually to measure the overall effectiveness of the Integrated Safety Management System and to identify problem areas.

Although the oversight program encourages feedback and continuous improvement, there are certain initiatives that we need to implement to further support the acceleration efforts. We need to finalize and implement a contractor self-assessment validation process to determine the extent of DOE reliance that we can accord to the self-assessment. Additionally, the River Corridor contract needs to be fully incorporated into the oversight program before contract award to ensure DOE oversight is coordinated, consistent, and necessary with minimal disruption. Specific actions to improve oversight include fully implementing the validation of self-assessments into the contractor oversight program and establishing an integrated evaluation plan for the River Corridor Contract Office of Performance Evaluation.

Integrated Safety Management. We long ago accepted the concepts and principles of Integrated Safety Management (ISM), and have made significant progress in implementing ISM each time a work package is prepared. However, by focusing on each individual work package, we sometimes gave insufficient attention to higher-level work planning where decisions are made regarding what work should be undertaken. We are therefore incorporating ISM thinking into these higher levels of management where major work identification and contracting decisions are made, because this is where ISM thinking can achieve breakthrough safety improvements. The C3T initiatives and this plan both exemplify our adoption of ISM principles at higher management planning levels.

4.2.7 Financial Management

The success of Hanford's risk-based management approach also depends on effective financial management including strong internal controls and effective and efficient processes and reporting systems. We will request the following changes to help ensure the successful acceleration of Hanford Site cleanup.

- Reduction in the number of budget control points at Hanford will provide a breakthrough change that will accelerate cleanup by removing administrative barriers that inhibit success. A single operating control point for all work other than the WTP at the Hanford Site will provide more flexibility to efficiently manage the work as a project. It will allow Hanford to optimize available funds to achieve greater performance from our performance-based contractors while maintaining accountability at the Project Baseline Summary (PBS) level. A separate control point for the WTP construction project already exists to effectively manage this major capital investment.
- Commitment by the Administration and Congress to support the multi-year funding requirements needed to accomplish this plan will provide predictability and eliminate costly replanning activities resulting from annual funding uncertainties. Elimination of annual impact analyses to ramp up/ramp down work and staffing levels according to various budget scenarios will significantly increase the efficiency and ability of the Hanford workforce to stay focused on accelerated cleanup. This approach is consistent with Energy Secretary

Spencer Abraham's January 31, 2002 statement on the Department's Accelerated Cleanup Plan:

“Once an agreement is reached, there will be a roadmap for activity and budgets through Fiscal Year 2008, leading to predictable funding levels which the Department and the White House will consent to submit to Congress for the entire period of these agreements.”

4.2.8 Streamlining Hanford Infrastructure

The Hanford Site infrastructure includes buildings, roads, power, water and sewer, analytical laboratories, and telecommunications. Although it has served well for over 50 years, much of this aging infrastructure is at or near the end of its useful life and will not support ongoing site cleanup activities without additional investment. These additional investments, along with fixed operational costs, divert funds that could be used to accelerate cleanup activities.

We have various efforts underway to eliminate or reduce these liabilities and associated costs. We will aggressively reduce impacts by aligning our infrastructure with critical cleanup and operational needs to ensure that we make no unnecessary investments and that we achieve maximum return from ongoing activities. We will ensure our investments are only for those facilities and services essential to complete the cleanup mission.

Consistent with the emphasis on completing the cleanup by 2035, we will manage the site infrastructure with the objectives of:

- Downsizing the infrastructure in conjunction with cleanup progress;
- Upgrading/extending service life only where necessary to meet minimum requirements associated with cleanup and Central Plateau waste management activities, including the WTP; and
- Lowering the cost profile by reducing the fixed infrastructure.

We will manage the infrastructure to extend its useful life only to the extent required for on-going operations. We will allow systems to run to failure whenever such an approach does not endanger personnel or the environment. We will minimize the on-site population to reduce demands and, more importantly, allow consolidation of resources.

As the overall footprint shrinks, we will aggressively manage the location of remaining personnel to minimize required infrastructure, with significant cost benefits.

Specific initiatives are underway to effect the desired changes in managing infrastructure that will:

- Move personnel offsite to lower the cost profile (currently a C3T initiative);
- Improve the operating model via implementation of the proven “City Manager” concept to support fiscal management at a site level; and

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- Plan for re-baselining the Landlord Program to be consistent with the overall acceleration of Hanford Site cleanup to 2035.

The most visible change will be the move of personnel off of the Hanford Site. Only personnel with a hands-on need will be located onsite; thus, utility coverage and waste volumes will be correspondingly reduced to minimum operational levels and the amount of water used and discarded on the Plateau (reduces driving force for groundwater contamination). We will be aggressively collapsing the footprint to enable elimination of major sections of the infrastructure and consolidating efforts on the remaining critical components, allowing further shift of funds to accelerated cleanup activities.

Through the City Manager concept we are producing both quantifiable and tangible savings, which will increase in succeeding phases of implementation. This concept is similar to a city public works department where centralized services are provided through a single entity. The City Manager will focus both on the needs of customers and on the overall Hanford Site systems. It provides improved fiscal stability that allows us to more accurately estimate cost profiles for needed services.

5.0 FUNDING

Implementing this plan requires a modest increase in near-term annual funding to realize significant improvement in lifecycle costs and schedules. The strategic initiatives in this plan are key drivers in accelerating completion of cleanup. Developing alternative treatment technologies and accelerating tank waste treatment completion is critical to completing overall site cleanup by 2035 and to eliminating the need for a second tank waste treatment plant. Accelerating cleanup of high-mortgage facilities and projects such as the Plutonium Finishing Plant, Spent Nuclear Fuels Project, and cesium and strontium capsule storage frees up funding for other cleanup projects and also supports the goal to complete cleanup by 2035. These three facilities/projects alone currently cost over \$230 million per year. Accelerating completion of the River Corridor Project to 2012 will reduce site mortgage lifecycle costs and landlord costs by over \$1 billion. Realizing the full potential for lifecycle savings and further accelerating completion of site cleanup will require us to implement additional initiatives from the C3T process.

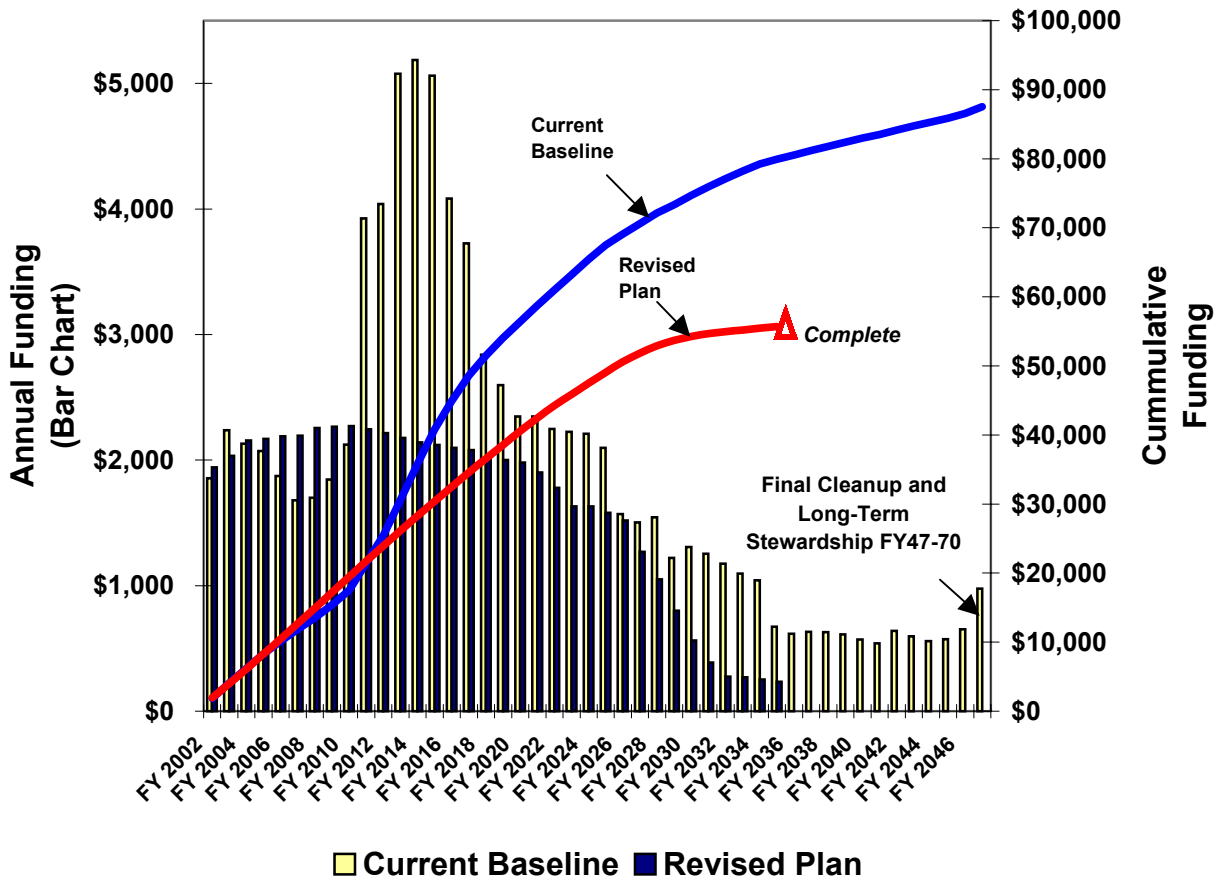


Figure 10 is a comparison of the current Hanford lifecycle cost estimate (based on cleanup completion in 2070) with a preliminary estimate of this revised plan to complete cleanup in

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2035. Implementing the project strategic initiatives in this plan and completing cleanup by 2035 leads to a potential lifecycle savings of up to \$40 billion. Most of this savings is realized by eliminating the need to construct and operate a second waste treatment plant and eliminating operations, landlord, and other support service costs that would have been required for continuing cleanup beyond 2035. This revised plan also reduces the large peak in funding that occurs in the 2012 through 2018 timeframe when the second waste treatment plant would have been constructed.

The strategic initiatives are new to Hanford and will require a near-term investment above current plans as shown on Table 2. This table will be updated as new initiatives are proposed.

Table 2. Hanford Site Accelerated Cleanup Near-Term Budget Profile (\$M).

(NOTE: This information is a work-in-progress. Updated data will be available following submission of the FY 2003/2004 budget)

	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08
Strategic Initiative						
Accelerate River Corridor						
Base funding						
Investment						
S/T						
Stabilization/Treatment of Nuclear Materials, Waste Disposal and Remediation, and D&D of Key Central Plateau Facilities						
Base funding						
Investment						
S/T						
Accelerate Tank Waste Treatment Completion						
Base funding						
Investment						
S/T						
Hanford Site Total						

6.0 CONCLUSION

This plan provides a significant improvement in the way we get cleanup done at Hanford. It significantly reduces risks to our workers, the public and the environment, substantially reduces our lifecycle costs, dramatically improves our timelines for cleanup, provides real integration between the RL and ORP cleanup strategies, leverages the excellent work we've done with our regulators into a plan for action, and maintains the quality of cleanup.

The timing has never been better for a change of this magnitude. The Administration is prepared to increase site-specific budget requests to those sites that can demonstrate a transformational approach to accelerating cleanup and reducing lifecycle risks and costs. The constructive working relationships among the C3T partners have already produced tangible results as evidenced by the Letter of Intent signed by the four agencies and outlining the commitment to work together to find mutually agreeable solutions to these complex cleanup issues.

Is this plan a guarantee of success? Are we certain it can be implemented and achieved exactly as laid out? No. There are still uncertainties – technical, financial, regulatory - that will be with us for a long time and will certainly affect how we proceed.

To navigate through those uncertainties, we will implement improved business processes. We will continue to work closely with our regulators to outline a framework for cleanup that protects people and the environment and makes sense. We will pursue the science and technology needed to solve some of our existing challenges. And we will continue to go after new strategic initiatives and targets of opportunity that can yield additional results.

What we know for sure is that our approach to Hanford Site cleanup can and must change. Completion at 2070 for \$90 billion takes too long and costs too much. Our commitment is to harness every available resource, technology, partner and idea possible to finish by 2035 or sooner. It's the right thing to do for the Northwest and the nation.

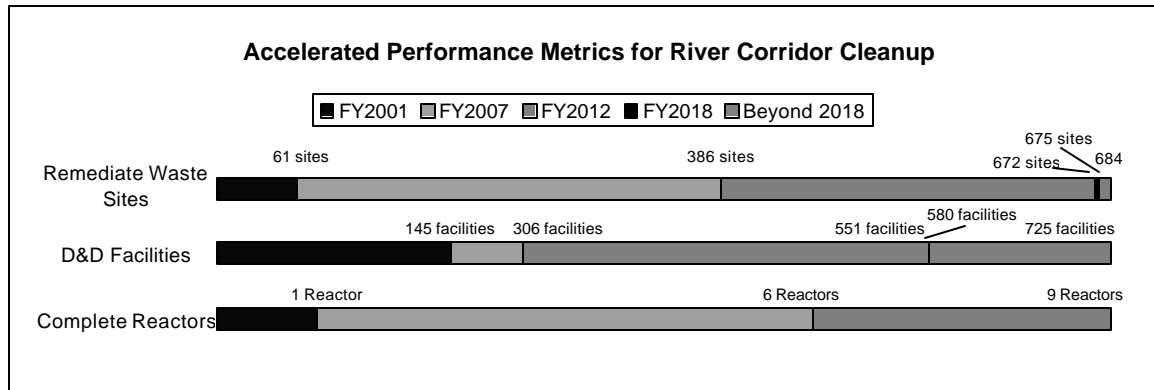
APPENDIX A

Specific Commitments to Accelerate Hanford Cleanup

Included in this appendix are the internal performance management milestones, Government Furnished Services/Items (GFS/I) and key decisions required to support the Performance Management Plan for the Accelerated Cleanup of the Hanford Site. Also included, where applicable, are the uncertainties related to successfully achieving the initiative.

The information in this appendix will be assessed monthly by DOE field staff and contractors. We will status progress quarterly with DOE-HQ during Quarterly Management Reviews. Changes to this data are subject to DOE approval.

Strategic Initiative 1: Acceleration of Columbia River Corridor Cleanup by More Than 20 Years to 2012



I. Milestones: (Note: Additional milestones will be identified during the development of the River Corridor Contract baseline)

1.Ia Action: Complete packaging and removal of the 324 Building spent nuclear fuel assemblies, rods, segments, and fragments, and transfer to the Hanford 200 Area.

Responsible: River Corridor Contractor

Commitment: Complete packing and removal by 06/30/03

1.Ib Action: Complete Interim Safe Storage of six former production reactors

Responsible: River Corridor Contractor

Commitments:

Complete Interim Safe Storage of three reactors (D, F, and H) by 2006

Complete Interim Safe Storage of three reactors (N, KE, KW) by 2012

1.Ic Action: Complete deactivation and demolition of the 324 and 327 Category II nuclear facilities. These are large hot cell facilities that contain over 500,000 curies of radioactivity and are about 1.2 miles from the Richland city limits.

Responsible: River Corridor Contractor

Commitment: Complete deactivation and demolition by 2010

1.Id Action: Complete deactivation and demolition of the 256 remaining 100 and 300 Area excess facilities

Responsible: River Corridor Contractor

Commitment: Complete deactivation and demolition by 2012

1.Ie Action: Complete cleanup of the 100 and 300 Area waste sites and burial grounds. There are 509 waste sites and 50 burial grounds to be completed after FY 2002.

Responsible: River Corridor Contractor

Commitment: Complete waste site remediation by 2012

II. GFS/I:

1.IIa Action: Provide Government Furnished Services/Items in accordance with River Corridor Contract Request for Proposals (RFP) Solicitation No. DE-RP06-02RL14300, Section C.

Responsible: RL

Commitment: Projected time frames/dates as stated in the RFP, Section C.

III. Key Decisions:

1.IIIa Action: Award new River Corridor Closure Contract

Responsible: RL

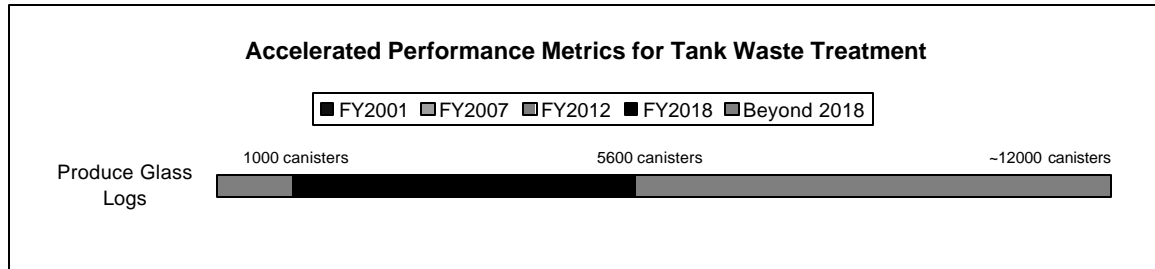
Commitment: Most of the River Corridor cleanup scope is being combined from two cost-plus-award-fee contracts to a single performance-based cost-plus-incentive-fee contract. This will put the River Corridor workscope under one contract to derive the efficiency and economies of scale. The Request for Proposals for this contract has been issued and proposals are due 05/20/02, with award to occur 08/26/02, if discussions prove not to be necessary.

IV. Uncertainties:

- The exact content of the 50 burial grounds to be remediated as part of the River Corridor Closure Contract is unknown
- Development of final groundwater protection strategy and its integration with subsequent stewardship actions

Strategic Initiative 2: Accelerate Tank Waste Treatment Completion by 20 Years

2.1 Accelerate Waste Treatment



I. Milestones:

Milestones leading to development of a more capable and flexible Waste Treatment Plant (WTP) (Additional milestones will be defined subject to DOE approval of individual facility performance enhancements):

2.1.Ia Action: Complete steam reformer waste form test and scoping study (system optimization study). This milestone will include submission of test results for DOE evaluation and option selection.

Responsible: Bechtel National, Inc.

Commitment: 08/31/02

2.1.Ib Action: Submit system optimization study for increased initial High Level Waste (HLW) capacity. This milestone will support DOE evaluation and option selection.

Responsible: Bechtel National, Inc. and CH2M HILL Hanford Group

Commitment: TBD

2.1.Ic Action: Submit system optimization study for incorporation of blending processes into the River Protection Project (RPP) baseline. This milestone will support DOE evaluation and option selection.

Responsible: Bechtel National, Inc. and CH2M HILL Hanford Group

Commitment: TBD

2.1.Id Action: Award contract for laboratory scale testing of the application of steam reformer technology to Hanford tank waste.

Responsible: Bechtel National, Inc.

Commitment: 09/30/02 (Contingent upon successful waste form test.)

2.1.Ie Action: Complete non-radioactive testing of steam reformer. Initial testing of the application of steam reforming to Hanford tank waste will be completed using simulated non-radioactive tank wastes. The results of this testing will include an update to the steam reformer system optimization study and will be a key basis for deciding whether to proceed with radioactive testing.

Responsible: Bechtel National, Inc.

Commitment: TBD

2.1.If Action: Complete radioactive testing of steam reformer technology using actual Hanford tank wastes. The wastes to be tested will represent the types of low-activity waste (LAW) for which treatment by this technology may be more appropriate than vitrification. This will include an update to the steam reformer system optimization study.

Responsible: Bechtel National, Inc.

Commitment: TBD

2.1.Ig Action: Initiate design changes for selected WTP enhancements and start implementing the selected enhancements to the WTP relative to steam reformer technology, blending, and HLW capacity.

Responsible: Bechtel National, Inc.

Commitment: TBD

Milestones related to WTP construction:

2.1.Ih Action: Start WTP construction. This Tri-Party Agreement (TPA) milestone will be completed with the first placement of structural concrete at one of the principal WTP facilities.

Responsible: Bechtel National, Inc.

Commitment: 12/31/02 (Recovery Plan¹ date)

BNI target² dates:

- 07/02/02 (Start LAW facility construction)
- 07/02/02 (Start HLW facility construction)
- 11/06/02 (Start pretreatment facility construction)

2.1.Ii Action: Complete WTP construction.

Responsible: Bechtel National, Inc.

Commitment: 11/30/07 (WTP Contract)

BNI target dates:

- 05/17/06 (Complete LAW facility construction)
- 12/01/05 (Complete HLW facility construction)
- 05/31/06 (Complete pretreatment facility construction)

¹ The Recovery Plan was submitted to the Washington Department of Ecology and contains a revised TPA compliance date for start of construction.

² BNI Target dates reflect BNI's current planning baseline and are not contractually binding dates. However, by accelerating completion of some contract dates, BNI can accelerate performance fee payments.

Milestones related to WTP commissioning and operations:

2.1.Ij Action: Start WTP hot commissioning. This is a TPA milestone that is defined as the first hot feed to pretreatment.

Responsible: Bechtel National, Inc.

Commitment: 12/31/07 (WTP Contract)

BNI target dates:

- 10/30/07 (Start LAW facility hot commissioning)
- 11/08/07 (Start HLW facility hot commissioning)
- 08/01/07 (Start pretreatment facility hot commissioning)

2.1.Ik Action: Complete WTP hot commissioning, demonstrating the WTP is fully operational.

Responsible: Bechtel National, Inc.

Commitment: January 31, 2011 (WTP Contract)

BNI target dates:

- 02/10/09 (Complete LAW facility hot commissioning)
- 07/27/09 (Complete HLW facility hot commissioning)
- 01/09/09 (Complete pretreatment facility hot commissioning)

2.1.II Action: Reach full WTP operating capacity, achieving target throughput levels on a sustaining basis that meets or beats accelerated processing rates.

Responsible: Bechtel National, Inc.

Commitment: 01/31/12

2.1.Im Action: Complete treatment of 10% of tank waste by mass (25% by activity). The TPA Phase 1 waste treatment milestone would be accelerated by 4+ years.

Responsible: Bechtel National, Inc.

Commitment: 03/31/14

2.1.In Action: Complete treatment of HLW and LAW using the WTP and alternative technologies.

Responsible: Bechtel National, Inc.

Commitment: 09/30/28

II. GFS/I:

2.1.IIa Action: DOE approval to conduct steam reformer technology waste form test.

Responsible: ORP

Commitment: 05/07/02

2.1.IIb Action: DOE evaluation of waste form test and authorization to conduct bench scale steam reformer technology test.

Responsible: ORP

Commitment: 09/30/02

2.1.IIc Action: DOE approval to conduct steam reformer technology radioactive testing.
Responsible: ORP
Commitment: TBD

2.1.IId Action: WTP Permit modifications and Safety Analysis Report approval for steam reformer technology.
Responsible: ORP
Commitment: 06/30/03

2.1.IIe Action: DOE Approval of WTP acceptance testing (as specified in the WTP contract)
Responsible: ORP
Commitment: 11/30/07

2.1.IIf Action: Approve WTP operations at target capacity throughput
Responsible: ORP
Commitment: 11/30/11

2.1.IIg Action: DOE facility acceptance after completion of hot commissioning (as specified in the WTP contract)
Responsible: ORP
Commitment: 7/31/11 (WTP Contract)
BNI target date: 01/31/10 (Complete facility acceptance)

III. Key Decisions:

2.1.IIIa Action: DOE authorization to start WTP construction
Responsible: DOE HQ Deputy Secretary of Energy (S-2)
Commitment: 05/15/02

2.1.IIIb Action: DOE approval of incremental investment to support accelerated River Protection Project (RPP)
Responsible: DOE HQ Assistant Secretary for Environmental Management (EM-1)
Commitment: TBD

2.1.IIIc Action: DOE evaluation and decisions to proceed with addition of a blending facility
Responsible: DOE HQ EM-1/S-2 (depending on magnitude of change request)
Commitment: TBD

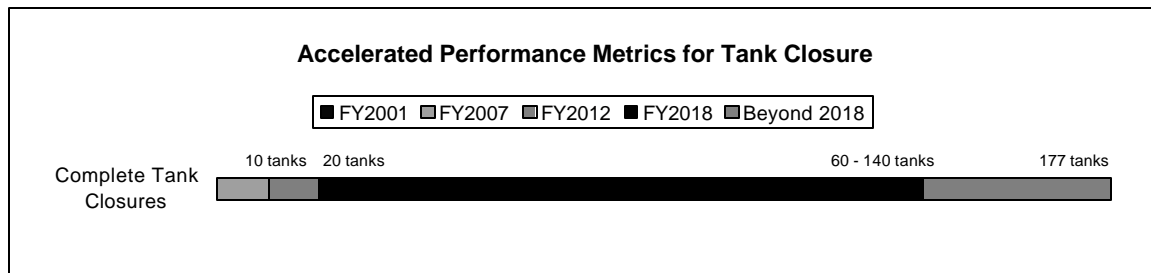
2.1.IIIId Action: DOE evaluation of increased initial HLW capacity and authorization to implement. This action will expand the WTP scope to enable startup with full HLW processing capacity of 6 metric tons of glass per day.
Responsible: DOE HQ EM-1 /S-2 (depending on magnitude of change request)
Commitment: TBD

2.1.IIIe Action: DOE authorization to include steam reformer technology in WTP scope
Responsible: DOE HQ EM-1/S-2 (depending on magnitude of change request)
Commitment: TBD

IV. Uncertainties:

- Readiness and capability of the alternative technologies to achieve throughputs required to meet the accelerated processing goals and ability to attain timely permit modifications
- Timely integration of WTP permitting actions with potential in-plant enhancements such as steam reforming technology and ability to attain timely permit modifications
- Readiness and capability of the WTP to achieve full accelerated operating capacity on a sustained basis consistent with processing rates
- Ability to retrieve wastes at a rate that meets the feed requirements of the WTP and alternative technology treatment modules on a sustainable basis
- RPP enhancements are bounded by existing National Environmental Policy Act (NEPA) documentation

2.2 Tank Closure



I. Milestones:

2.2.Ia Action:

Complete draft closure plan for tank closure demonstrations and submit to ORP for approval. This phase of the initiative identifies the tanks and lays the foundation for demonstrating the work process, regulatory process, overall plan, and technology needs to proceed with closure of Hanford tank farms.

Responsible: CH2M HILL Hanford Group

Commitment: 08/31/02

2.2.Ib Action: Initiate design activities for retrieval and closure demonstration.

Responsible: CH2M HILL Hanford Group

Commitment: 10/31/02

2.2.Ic Action: Complete C-106 waste retrieval (first tank). This phase of the initiative will remove the post retrieval liquids from C-106.

Responsible: CH2M HILL Hanford Group

Commitment: 12/31/03

2.2.Id Action: Complete C-106 closure (first tank). This phase of the initiative will proceed to closure of the C-106 tank using the TPA, Appendix H, process to obtain final condition acceptance by DOE and the regulators.

Responsible: CH2M HILL Hanford Group

Commitment: 02/28/04

2.2.Ie Action: Complete C-200 series tank closure (4 tanks). This phase of the initiative provides for an “Interim Action,” pending completion of the Closure Environmental Impact Statement (EIS) and Record of Decision (ROD), for waste removal as needed and stabilization of the four 200 series C Farm tanks as defined in the ORP Closure Demonstration Project.

Responsible: CH2M HILL Hanford Group

Commitment: 12/31/04

2.2.If Action: Develop a closure and mission completion environmental impact statement for the Tank Farm Program

Responsible: CH2M HILL Hanford Group

Commitment: 08/31/05

2.2.Ig Action: Prepare updated draft closure work plan. This plan will provide the strategy for accelerated closure of all remaining SSTs and will implement ISMS feedback and lessons learned from the first 5 tank closures. This plan will be submitted by DOE to the State of Washington Department of Ecology.

Responsible: CH2M HILL Hanford Group

Commitment: 12/31/05

2.2.Ih Action: Complete S-112 closure (1 tank). This phase of the initiative will implement the Closure System Deployment Plan approved under the Closure EIS and ROD for the permanent closure of Tank S-112.

Responsible: CH2M HILL Hanford Group

Commitment: 06/30/06

2.2.Ii Action: Complete S-102 closure (1 tank). This phase of the initiative will implement the closure System Deployment Plan approved under the Closure EIS and ROD for the permanent closure of Tank S-102.

Responsible: CH2M HILL Hanford Group

Commitment: 12/31/06

2.2.Ij Action: Complete C-104 closure (1 tank). This phase of the initiative will implement the Closure System Deployment Plan approved under the Closure EIS and ROD for the permanent closure of Tank C-104.

Responsible: CH2M HILL Hanford Group

Commitment:06/30/07

2.2.Ik Action: Complete AX-104 closure (1 tank). This phase of the initiative will implement the Closure System Deployment Plan approved under the Closure EIS and ROD for the permanent closure of Tank AX-104.

Responsible: CH2M HILL Hanford Group

Commitment:08/31/07

2.2.II Action: Complete AX-102 closure (1 tank). This phase of the initiative will implement the Closure System Deployment Plan approved under the Closure EIS and ROD for the permanent closure of Tank AX-102.

Responsible: CH2M HILL Hanford Group

Commitment:09/30/07

2.2.Im Action: Complete TY Farm closure (6 tanks). This phase of the initiative will implement the Closure System Deployment Plan approved under the Closure EIS and ROD for the TY Tank Farms, consisting of six 100 series tanks and associated ancillary equipment.

Responsible: CH2M HILL Hanford Group

Commitment:09/30/10

2.2.In Action: Complete U-200 series tank closures (4 tanks). This phase of the initiative will implement the Closure System Deployment Plan approved under the Closure EIS and ROD for the four 200 series U Farm waste tanks.

Responsible: CH2M HILL Hanford Group

Commitment:01/31/12

2.2.Io Action: Complete closure of 60 to 140 SSTs. The number to be closed depends on the ability of WTP enhanced operations, alternative processing options, and double-shell tank (DST) space initiatives to provide adequate space in the DST system to accommodate retrieval of waste to support closure.

Responsible: CH2M HILL Hanford Group

Commitment:12/31/18

II. GFS/I:

2.2.IIa Action: Complete review of the current NEPA documentation (inclusive of Supplement Analysis 4) and make a determination whether it is sufficient to support initial closure demonstration activities

Responsible: ORP and RL

Commitment:08/31/02

2.2.IIb Action: Authorization to execute the Tank Closure Plan for selected tank demonstrations

Responsible: ORP

Commitment: 09/30/02

2.2.IIc Action: Submit analysis for HQ approval that demonstrates required partitioning of high level waste consistent with DOE orders and directives implementing the Atomic Energy Act (AEA)

Responsible: ORP

Commitment: 7/31/03

2.2.IId Action: Authorization to execute the SST draft Closure Work Plan. This authorization will initiate the implementation of closure work for the remaining SSTs.

Responsible: ORP

Commitment: 03/31/06

2.2.IIe Action: Issue NEPA Record of Decision (ROD) for tank closure activities

Responsible: ORP and RL

Commitment: 05/31/06

III. Key Decisions:

2.2.IIIa Action: Determination from Ecology that tank closure demonstrations can occur in accordance with landfill closure of tank farm waste management areas under RCRA without need to obtain a final status Part B Permit Application.

Responsible: Ecology

Commitment: 10/31/02

2.2.IIIb Action: Determination that RCRA closure process can be used in lieu of DOE O 435.1 closure process requirements, similar to past closures under CERCLA

Responsible: DOE HQ EM-1

Commitment: 10/31/02

2.2.IIIc Action: HQ approval of ORP analysis that demonstrates required partitioning of high-level waste consistent with DOE orders and directives that implement the AEA.

Responsible: DOE HQ EM-1

Commitment: 10/31/03

2.2.III d Action: Determination that RCRA land disposal restrictions can be complied with as part of closure actions – i.e., no additional waste treatment required to meet LDR. If additional treatment is required, in-tank treatment would be sufficient to meet these requirements.

Responsible: Ecology

Commitment: 10/31/03

2.2.IIIe Action: Approval of Closure Work Plan. This plan documents the strategy for accelerated closure of remaining SSTs.

Responsible: Ecology

Commitment: 03/31/06

IV. Uncertainties:

- Whether past retrievals and future retrieval actions remove adequate waste to allow closure per TPA.
- Whether Waste Incidental to Reprocessing (WIR) determinations for tank waste can be obtained for tank residuals.
- Whether the Waste Treatment Plant enhanced operation, alternative processing options, and double-shell tank space initiatives provide adequate space in the DST system to accommodate retrieval of waste to support closure.
- Agreement among DOE, EPA, and Ecology regarding the analytical techniques that will be used for assessment of short-term and long-term risks to human health and the environment.
- Regulatory agreement on tank retrieval and closure sequence.
- Timely development of a tank closure approach that will be agreed to by Ecology and the EPA.
- Development and approval of the EIS and ROD can be completed by 2005. Typical EIS development and approval has taken as much as five years.

2.3 Alternative Technologies

I. Milestones:

2.3.Ia Action: Complete flowsheet analysis and initial set of technology recommendations for hot laboratory testing. This provides the basis for selecting technologies for early testing based on potential mission acceleration benefits.

Responsible: CH2M HILL Hanford Group

Commitment: 06/30/02

2.3.Ib Action: Complete Hot Laboratory Testing. This phase of the initiative will provide laboratory analysis and supporting engineering data to guide alternative technology selection. The Contractor will also provide a system optimization study for utilization of alternate treatment technologies.

Responsible: CH2M HILL Hanford Group

Commitment: 08/31/03

2.3.Ic Action: Complete Cold Pilot Demonstration(s) and provide documented recommendations to DOE. This phase of the initiative will provide confirmation that the selected technology is acceptable for deployment. The Contractor will update the system optimization study for utilization of alternate treatment technologies.

Responsible: CH2M HILL Hanford Group

Commitment: 08/31/04

2.3.Id Action: Establish a project plan for hot pilot testing or full deployment of selected technologies. The Contractor will update the system optimization study for utilization of alternate treatment technologies.

Responsible: CH2M HILL Hanford Group

Commitment: 02/28/05

2.3.Ie Action: Complete ORR for Start-Up. This phase of the initiative will engineer, procure, and construct the alternative waste treatment process. At the completion of this phase, the process equipment will ready for operations.

Responsible: CH2M HILL Hanford Group

Commitment: 07/31/06

II. GFS/I:

2.3.IIa Action: Approve Technology Selection for Hot Laboratory Scale Testing

Responsible: ORP

Commitment: 07/31/02

2.3.IIb Action: Approve Plans for Hot Laboratory Scale Testing

Responsible: ORP

Commitment: 08/31/02

2.3.IIc Action: Approve Plans for Cold Pilot Demonstration

Responsible: ORP

Commitment: 08/31/03

2.3.IId Action: Submit analysis, for HQ approval, that demonstrates required partitioning of high level waste consistent with DOE orders and directives that implement the AEA

Responsible: ORP

Commitment: 07/31/03

2.3.IIe Action: Development of remote handled TRU waste acceptance criteria for WIPP. This would support potential packaging of waste designated as TRU for disposal off-site at WIPP

Responsible: DOE HQ EM-1

Commitment: 09/30/06

III. Key Decisions:

2.3.IIIa Action: HQ approval of ORP analysis that demonstrates required partitioning of high level waste consistent with DOE orders and directives that implement the AEA

Responsible: DOE HQ EM-1

Commitment: 10/31/03

2.3.IIIb Action: Approve Deployment of Alternative Technologies

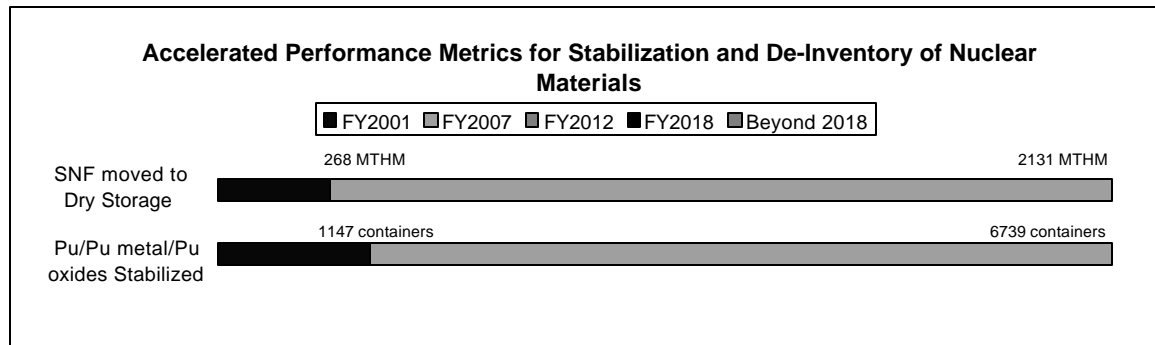
Responsible: ORP

Commitment: 08/31/04

IV. Uncertainties:

- Ability to permit the processes and final waste forms to support demonstrations
- Fraction of waste that is categorized as high-level, TRU, low-level, and incidental in accordance with DOE Orders and directives implementing the AEA
- Demonstration of alternate technologies is bounded by existing NEPA documentation
- Prompt resolution of permitting actions required by any alternate treatment and immobilization technique

Strategic Initiative 3: Rapid Stabilization and De-Inventory of Nuclear Materials



3.1 Spent Nuclear Fuel

I. Milestones:

3.1.Ia Action: Complete removal of 957 Metric Tons of Heavy Metal (MTHM) (190 Multiple Canister Overpacks) of spent nuclear fuel from KW Basin

Responsible: Fluor Hanford

Commitment: 12/31/02

3.1.Ib Action: Complete removal of all K Basin spent nuclear fuel

Responsible: Fluor Hanford

Commitment: 7/31/04

3.1.Ic Action: Complete KE Basin water removal

Responsible: Fluor Hanford

Commitment: 9/30/05

3.1.Id Action: Complete removal of spent nuclear fuel, sludge, debris, and water from K Basins

Responsible: Fluor Hanford

Commitment: 9/30/06 (10 months before Tri Party Agreement (TPA) milestone date of 7/31/07)

II. GFS/I:

3.1.IIa Action: DOE-RL to work in conjunction with the Fluor Hanford, River Corridor Contractor, and the regulators to obtain early acceptance and agreement of the requirements and the end-point criteria for the 100-K Area facilities deactivation.

Responsible: RL

Commitment: 1/31/03

III. Key Decisions:

3.1.IIIa Action: Acceptance of 100-K Area facilities by the River Corridor Contractor as each facility meets end-point criteria requirements. Facility transfers will be complete 10-months or more before the existing baseline of 7/31/07.

Responsible: River Corridor Contractor

Commitment: 9/30/06

IV. Uncertainties:

None.

3.2 Special Nuclear Material (Plutonium)

I. Milestones:

3.2.Ia Action: Provide FY 2002 incremental funding (\$3M)

Responsible: RL and Fluor Hanford

Commitment: 5/31/02

3.2.Ib Action: Start Plutonium Finishing Plant (PFP) shipments to Savannah River Site (Record of Decision (ROD) 1)

Responsible: Fluor Hanford

Commitment: 10/1/02

3.2.Ic Action: Commence detail planning for accelerated de-inventory and decommissioning

Responsible: Fluor Hanford

Commitment: 10/1/02

3.2.Id Action: Complete Grout Vault preliminary design report for alternate SNM storage

Responsible: Fluor Hanford

Commitment: 2/1/03

3.2.Ie Action: Begin routine shipments to Savannah River Site (ROD 3)

Responsible: Fluor Hanford

Commitment: 4/30/03

3.2.If Action: Complete stabilization in support of Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 2000-1

Responsible: Fluor Hanford

Commitment: 2/28/04

3.2.Ig Action: Complete de-inventory of PFP vaults

Responsible: Fluor Hanford

Commitment: 9/30/05

3.2.Ih Action: Complete legacy holdup removal

Responsible: Fluor Hanford

Commitment: 9/30/06

3.2.Ii Action: Complete protected area reduction and reduce safeguards

Responsible: Fluor Hanford

Commitment: 9/30/06

3.2.Ij Action: Complete demolition of non-contaminated buildings

Responsible: Fluor Hanford

Commitment: 9/30/06

3.2.Ik Action: Complete PFP demolition to slab on grade

Responsible: Fluor Hanford

Commitment: 9/30/09

II. GFS/I:

3.2.IIa Action: 9975 Certificate of Compliance amendment

Responsible: RL

Commitment: 8/15/02

3.2.IIb Action: Issue Phase 1 decommissioning Basis for Interim Operations (BIO) for 232-Z, Plutonium Recycle Facility (PRF), & 241-Z

Responsible: RL

Commitment: 11/30/02

3.2.IIc Action: Obtain CERCLA de-inventory and decommissioning documentation for 232-Z incinerator/PRF/241-Z

Responsible: RL

Commitment: 10/1/02

3.2.IId Action: Complete Grout Vault Vulnerability Assessment

Responsible: RL

Commitment: 2/01/03

3.2.IIe Action: Approve Safeguard Termination Limit in support of residue disposition to Waste Isolation Pilot Project (WIPP)

Responsible: RL

Commitment: 4/30/03

3.2.IIf Action: Obtain CERCLA de-inventory and decommissioning documentation for remaining buildings

Responsible: RL

Commitment: 6/30/03

3.2.IIg Action: Issue final Decontamination and Decommissioning Basis for Interim Operations

Responsible: RL

Commitment: 12/30/03

3.2.IIh Action: Approve protected area reduction/termination

Responsible: RL

Commitment: 12/31/06

III. Key Decisions:

3.2.IIIa Action: International Atomic Energy Act (IAEA) withdrawal of PFP material

Responsible: EM-1

Commitment: 1/31/03

3.2.IIIb Action: Approve ROD 1 by the State of South Carolina

Responsible: DOE-HQ

Commitment: 9/30/02

3.2.IIIc Action: Approve ROD 3 {Fuel Grade} by the State of South Carolina

Responsible: DOE-HQ

Commitment: 3/31/03

3.2.III d Action: Approve exemption to new Design Basis Threat (DBT) requirements (assume issued by 9/30/02)

Responsible: DOE-HQ

Commitment: 12/31/02 (90 days after issue of new DBT requirements)

IV. Uncertainties:

- Approval of ROD(s) by the State of South Carolina

3.3 Cesium/Strontium (Cs/Sr) Capsules

I. Milestones:

3.3.Ia Action: Complete Cs/Sr Capsule Disposition Feasibility Report

Responsible: Fluor Hanford

Commitment: 5/31/02

3.3.Ib Action: Start capsule disposition option selection and permitting process

Responsible: Fluor Hanford

Commitment: 10/1/02

3.3.Ic Action: Complete Systems/Facilities Engineering Analysis and Preferred Option Report

Responsible: Fluor Hanford

Commitment: 9/1/03

3.3.Id Action: Complete detailed engineering/design documents for dry storage

Responsible: Fluor Hanford

Commitment: 6/1/04

3.3.Ie Action: Order long-lead equipment for dry storage

Responsible: Fluor Hanford

Commitment: 9/1/04

3.3.If Action: Complete fabrication and construction/modifications for dry storage

Responsible: Fluor Hanford

Commitment: 6/1/05

3.3.Ig Action: Start transfer of first capsule to dry storage

Responsible: Fluor Hanford

Commitment: 10/1/05

3.3.Ih Action: Complete transfer of 33% of capsules to dry storage

Responsible: Fluor Hanford

Commitment: 9/30/06

3.3.Ii Action: Complete transfer of last capsule to dry storage

Responsible: Fluor Hanford

Commitment: 9/30/07

3.3.Ij Action: Complete Waste Encapsulation Storage Facility (WESF) deactivation.

Responsible: Fluor Hanford

Commitment: 9/30/09

II. GFS/I:

3.3.IIa Action: Approve Part B permit and Notice of Construction (NOC) required for dry storage of Cs/Sr capsules.

Responsible: RL

Commitment: 3/1/03

3.3.IIb Action: Approve Authorization Basis for the dry storage facility

Responsible: RL

Commitment: 12/31/03

3.3.IIc Action: Approve Vulnerability Assessment for dry storage of Cs/Sr capsules

Responsible: RL

Commitment: 12/31/03

3.3.IId Action: Approve BIO for deactivated WESF

Responsible: RL

Commitment: 9/30/07

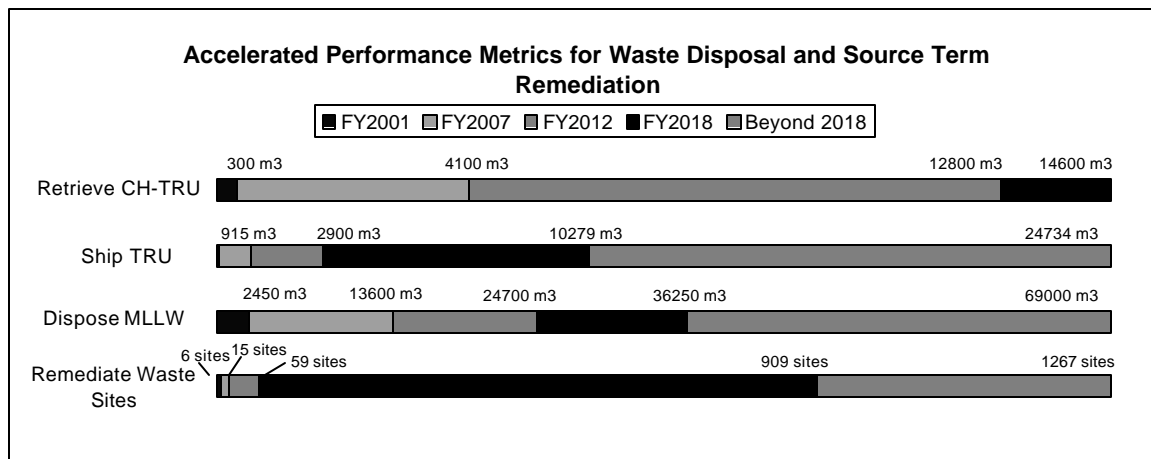
III. Key Decisions:

None

IV. Uncertainties:

- National Environmental Policy Act (NEPA) coverage supporting option
- Regulator acceptance of interim, dry storage of capsules on-Site
- Time period required for permit development, review, and approval
- Final disposition of capsules

Strategic Initiative 4: Accelerated Waste Disposal and Source Term Remediation



I. Milestones:

4.Ia Action: Initiate buried suspect transuranic (TRU) drum retrieval

Responsible: Fluor Hanford

Commitment: 03/31/03

4.Ib Action: Submit a plan to optimize timing and sequence for remediation of Central Plateau waste sites that pose the highest threat to groundwater

Responsible: Fluor Hanford

Commitment: 06/30/03

4.Ic Action: Initiate construction of lined mixed low level waste (MLLW)/low level waste (LLW) disposal facility(s)

Responsible: Fluor Hanford

Commitment: 04/30/04

4.Id Action: Complete construction of lined MLLW/LLW disposal facility(s)

Responsible: Fluor Hanford

Commitment: 09/30/05

4.Ie Action: Complete retrieval, designation, and storage/disposal of 15,000 drum-equivalents of suspect TRU waste

Responsible: Fluor Hanford

Commitment: 09/30/06

4.If Action: Complete treatment and/or disposal of 5,200 cubic meters of MLLW

Responsible: Fluor Hanford

Commitment: 09/30/07

4.Ig Action: Complete treatment and/or disposal of all stored MLLW (~7,000 cubic meters) and newly generated MLLW (forecasted to be ~7,000 cubic meters)

Responsible: Fluor Hanford

Commitment: 09/30/08

4.Ih Action: Complete certification and shipment of 1,000 cubic meters of TRU waste to Waste Isolation Pilot Plant (WIPP)

Responsible: Fluor Hanford

Commitment: 09/30/08

II. GFS/I:

4.IIa Action: Obtain a mutually acceptable resolution of the Documented Safety Analysis (DSA)/Safety Evaluation Report for buried TRU retrieval

Responsible: RL

Commitment: 07/31/02

4.IIb Action: Obtain from Carlsbad Field Office (CBFO) the WIPP permit modification for headspace gas sampling

Responsible: RL

Commitment: 09/30/02

4.IIc Action: Obtain approval from CBFO to extend the Hanford Site certification to streams beyond the current debris streams

Responsible: RL

Commitment: 09/30/02

4.IId Action: Obtain a Record of Decision for the Solid Waste Environmental Impact Statement (EIS) that supports MLLW receipt, treatment, storage and disposal operations consistent with this initiative. This ROD must also support TRU retrieval and the lined disposal facility consistent with this initiative

Responsible: RL

Commitment: 01/30/03

4.IIe Action: Approve remaining permitting and authorization basis documentation to allow MLLW receipt, treatment, storage, and disposal operations consistent with this initiative

Responsible: RL

Commitment: 04/30/03

4.IIf Action: Approve solid waste master DSA to support improved/efficient management of MLLW and suspect TRU wastes (i.e. treatment, headspace gas sampling, verification, etc.)

Responsible: RL

Commitment: 07/22/03

III. Key Decisions:

4.IIIa Action: Approve request to initiate buried TRU drum retrieval (excluding venting) based on contractor readiness assessment requirements only

Responsible: RL

Commitment: 07/30/02

4.IIIb Action: Approve Justifications for Continued Operation for LLBG/CWC operations to address 10CFR830 Subpart B compliance gaps pending DSA approval

Responsible: RL

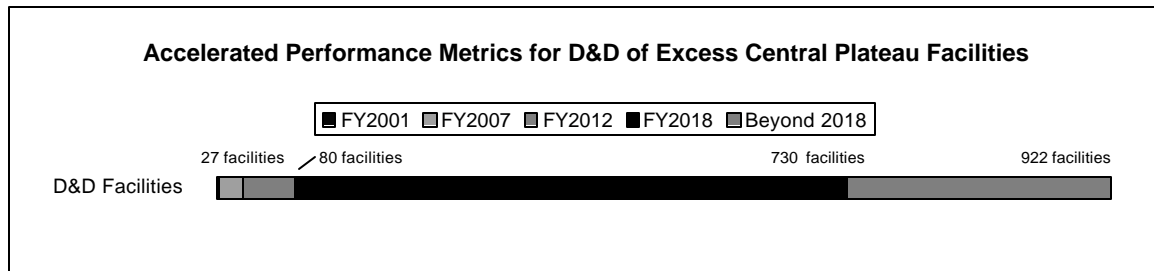
Commitment: 08/30/02

IV. Uncertainties:

- Local availability of thermal and non-thermal waste treatment capability
- The schedule for approval of the 200 Liquid Waste Processing Facility delisting petition modification by Environmental Protection Agency (EPA)
- Resolution of the path forward for dealing with high concentration TRU drums and breached TRU drums

- Hanford’s priority standing in the DOE overall TRU shipping schedule to WIPP
- Potential changes to the TRU program certification requirements or WIPP-Waste Acceptance Criteria
- Completion of remedial actions to address 618-10 and 618-11 burial grounds

Strategic Initiative 5: Accelerate the Decontamination and Decommissioning of Excess Central Plateau Facilities



I. Milestones:

5.Ia Action: Submit plan to address balance of excess Central Plateau facilities

Responsible: RL

Commitment: 05/30/03

5.Ib Action: Issue a Project Management Plan for implementation of the U Plant ROD

Responsible: Fluor Hanford

Commitment: 12/31/03

5.Ic Action: Complete demolition of the 271-U administrative building

Responsible: Fluor Hanford

Commitment: 09/30/05

5.Id Action: Complete Remedial Investigation/Feasibility Study (RFI) or RFI/ Corrective Measure Study (CMS) process for all operable units associated with waste sites to be dispositioned as part of U Plant D&D

Responsible: Fluor Hanford

Commitment: 09/30/06

5.Ie Action: Complete 221-U demolition, demolition of ancillary facilities and non-barrier remedial actions for waste sites within environmental cap footprint

Responsible: Fluor Hanford

Commitment: 09/30/08

5.If Action: Complete construction of environmental cap (barrier system) for U Plant and waste sites within environmental cap footprint

Responsible: Fluor Hanford

Commitment: 09/30/10

5.Ig Action: Complete remediation of waste sites outside of the environmental cap footprint

Responsible: Fluor Hanford

Commitment: 09/30/10

II. GFS/I:

5.IIa Action: Approve the risk assessment methodology for use in developing the proposed plan required to support implementation of the U Plant ROD

Responsible: RL

Commitment: 03/30/03

5.IIb Action: Issue a Disposal Authorization for U Plant and associated waste site disposition

Responsible: DOE-HQ

Commitment: 09/30/04

III. Key Decisions:

5.IIIa Action: Obtain a Record of Decision for U Plant disposition

Responsible: RL

Commitment: 06/30/03

5.IIIb Action: Obtain a Record of Decision for disposition of groundwater-affecting waste sites and/or waste sites associated with U Plant disposition

Responsible: RL

Commitment: 09/30/07

IV. Uncertainties:

- Acceptability of 221-U risk assessment data as a basis for a ROD. The need for revision or supplementation of the risk assessment data (or methodology) could delay the ROD and impact the acceleration schedule.
- Selection of “non-retrieval” remedial actions for waste sites that will be compatible with the canyon environmental cap system consistent with the planned completion date of 09/30/10
- Regulatory acceptance of waste streams to be disposed in U Plant

Business Management

6.1 Human Resource Management

I. Milestones

6.1.Ia Action: Demonstration Project feasibility determination

Responsible: RL and ORP

Commitments: 06/01/02

6.1.Ib Action: Develop action plans for organizational improvement initiatives ensuring human resource processes are in place consistent with the DOE Human Capital objectives, and to ensure that the organization is postured to effectively carry out the accelerated cleanup mission.

Responsible: RL and ORP

Commitments: 9/30/02

6.1.Ic Action: Approval of final report and action plans for organizational improvement initiatives

Responsible: RL and ORP

Commitments: 9/30/02

6.1.Id Action: Implementation of priority one improvements for organizational improvement initiatives

Responsible: RL and ORP

Commitments: 9/30/02

6.1.Ie Action: Development of Demonstration Project Implementation Plan

Responsible: RL and ORP

Commitments: 09/30/02

6.1.If Action: Demonstration project implementation

Responsible: RL and ORP

Commitments: 06/30/03 (dependent on feasibility determination)

II. GFIS:

None

III. Key Decisions:

6.1.IIIa Action: Approve of the Final Report (Phase I) and action plans of the operational improvement initiative on organizational development

Responsible: RL

Commitment: 5/30/02

6.1.IIIb Action: Manage priority and appropriate resource allocation to ensure implementation of the approved priority one action plans from the organizational development initiative

Responsible: RL

Commitment: 6/30/02

6.1.IIIc Action: Implement the approved priority one actions in accordance with the approved organizational development plan/schedule

Responsible: RL

Commitment: 9/30/02

6.1.III d Action: Approve Demonstration Project Implementation Plan

Responsible: EM-1, the DOE Office of Management, budget and Evaluation (ME-1), Office of Personnel Management (OPM)

Commitment: 6/30/03

IV. Uncertainties:

- Acceptance of RL as demonstration project for paybanding
- Impact of the demonstration project on implementation of the improvements already identified in the Organizational Development Plan. The broad scope and variability of the project could significantly impact the improvements that have been identified, and may take the initiative in several new directions.

6.2 Contracting

I. Milestones

6.2Ia Action: Complete review of existing major contracts, identify changes, and renegotiate performance incentives to reflect the accelerated cleanup objectives

Responsible: RL and ORP

Commitments: 12/31/02

6.2Ib Action: Award RCC contract and start transition

Responsible: RL and EM-1

Commitments: Complete by 8/26/02 if no discussions or 11/08/02 if discussions are needed

6.2Ic Action: Complete RCC transition and new contractor assumes responsibility

Responsible: RL and River Corridor Contractor

Commitments: Complete by 11/24/02 if no discussions or 02/06/03 if discussions are needed

6.2Id Action: Reach decision on new ORP operations contracting approach

Responsible: ORP and EM-1

Commitments: 4/01/05

6.2Ie Action: Reach decision on Central Plateau contracting approach
Responsible: RL and EM-1
Commitments: 10/31/04

6.2If Action: Award new ORP operations contract(s)
Responsible: ORP
Commitments: 4/01/06

6.2Ig Action: Award new Central Plateau Contract
Responsible: RL
Commitments: 7/1/06

6.2Ih Action: Review possibility of reducing the number of prime contracts on site
Responsible: RL and ORP
Commitments: TBD

II. GFIS:

6.2IIa Action: Issue guidance to the EM Hanford Site contractors related to accelerated cleanup and renegotiation of contract terms and incentives
Responsible: RL and ORP
Commitment: 9/30/02

III. Key Decisions:

6.2IIIa Action: Approve Mission Need (CD-O), including acquisition strategy for ORP operations
Responsible: Deputy Secretary, LPSO, EM-1 and ORP
Commitment: TBD

6.2IIIb Action: Approve Mission Need (CD-O), including acquisition strategy for Central Plateau
Responsible: Deputy Secretary, LPSO, EM-1 and RL
Commitment: 12/31/04

IV. Uncertainties:

- Out-year funding profile stability and support for acceleration of cleanup work. This is critical under Cost Plus Incentive Fee contracts or performance-based contracts with multi-year incentives.
- Availability of experienced, capable staff resources to properly administer performance-based contracts versus the traditional Management and Operations contractor administration philosophy.

6.3 Streamlining Requirements

I. Milestones

6.3.Ia Action: Tailor and Streamline Requirements – Increase productivity through elimination of unnecessary requirements and associated implementing documents

Responsible: RL

Commitments:

Evaluate deleting 30 more orders from FHI contract (99 to 69) by 6/30/02

Reduce FHI Manuals/Procedures from 650 to 400 by 9/30/02

6.3.Ib Action: Tailor and Streamline Requirements – Evaluate the continued applicability of 60 DOE Orders to the CHG contract.

Responsible: ORP

Commitment: 9/30/02

II. GFS/I

None

III. Key Decisions

None

IV. Uncertainties:

- Receiving DOE-HQ approval of exemptions;
- DOE-HQ, DNFSB support for requirements that we propose to modify or delete.

6.4 Project Management

I. Milestones:

6.4.Ia Action: Complete Hanford Site work plan as required by the Letter of Intent

Responsible: RL and ORP

Commitments: 08/31/02

6.4.Ia Action: Complete PBS-level Hanford Site integrated schedule and WBS for 2035 cleanup completion

Responsible: RL and ORP

Commitments: 1/01/03

6.4.IIe Action: Finalize detailed integrated Hanford Site baseline in support of accelerated cleanup by 2035

Responsible: RL and ORP

Commitments: 1/04

II. GFS/I:

6.4.IIa Action: Issue direction to contractors on revising RL baseline

Responsible: RL

Commitments: 9/30/02

III. Key Decisions:

None

IV. Uncertainties

- Acceptance of Hanford Site work plan
- Constraints on budget profiles for lifecycle analyses
- Decisions on initiatives identified by the Cleanup Constraints and Challenges Team (DOE, regulators, and contractors)

6.5 Streamlining Safety and Health Management Systems

I. Milestones:

6.5.Ia Action: Integrate safety and operational oversight - Develop and implement a performance-based measurement and monitoring system benchmarked after Institute for Nuclear Power Operations and SRS to determine the level of oversight and review needed for contractors. Revise the Integrated Evaluation Plan procedure to be more performance-based. Integrate the oversight activities to eliminate redundancies.

Responsible: RL

Commitment: 9/30/02

6.5.Ib Action: Integrate Safety and Operational Oversight – Conduct a Pilot Integrated Assessment of CH2M HILL Hanford Group (CHG) in which Integrated Safety Management (ISM) and performance/effectiveness-based assessments are evaluated concurrently, thereby minimizing the number of formal audits performed of the contractor. Complete ISM reviews of Bechtel National, Inc. Issue the Integrated Assessment report and revise the CHG and Bechtel National, Inc. Integrated appraisal based on the lessons learned from the Pilot review.

Responsible: ORP

Commitment: 9/30/02

6.5.Ic Action: 10CFR 830 Implementation Strategy – Effectively and efficiently implement the new nuclear safety rule for the D&D mission. Significantly improve cost, schedules, and efficiencies relative to traditional approaches. Create Documented Safety Analyses that allow backing out of the controls as the hazards are eliminated.

Responsible: RL

Commitment: 4/03

6.5.Id Action: 10CFR 830 Implementation Strategy - Effectively and efficiently implement the new nuclear safety rule for the D&D mission. Significantly improve cost, schedules, and efficiencies relative to traditional approaches. Create Documented Safety Analyses that allow backing out of the controls as the hazards are eliminated.

Responsible: ORP

Commitments:

By 5/15/02, submit to EM-1 the schedule for the submittal, approval, and implementation of the Rule-compliant Safety Analysis Report (SAR).

By 4/10/03, the contractors will submit their Rule-compliant SAR.

6.5.Ie Action: Further Delegate Approval Authorities - As the contractor's safety management systems and implementation of the systems mature, delegate approval authorities to the contractor that are currently provided by DOE as Government Furnished Items/Services (e.g., DSAs, SARPs, Quality Assurance Plans, etc).

Responsible: RL

Commitment: 4/03

II. GFI/S:

6.5.IIa Action: Approve ISM System for new contractors, annual approval of the Performance, Measures, Commitments and Objectives (ISMS Department of Energy Acquisition Regulations Clause)

Responsible: RL

Commitment: TBD

6.5.IIb Action: Approve contractor Documented Safety Analyses required to meet 10CFR 830

Responsible: RL

Commitment: 4/03

6.5.IIc Action: RL develop strategy that allows DOE to request further delegations.

Contract Modifications on List B

Responsible: RL

Commitment: TBD

III. Key Decisions:

None

IV. Uncertainties:

- Contractors meeting the 10CFR 830 Implementation Strategy 4/03 date due to funding

6.6 Budget Control Points

I. Milestones:

None

II. GFIS:

6.6.II Action: Provide Budget Control Point guidance to site contractors for FY 2003 execution and FY 2004-08 budget formulation.

Responsible: RL and ORP

Commitment: Issue guidance prior to 10/01/02

III. Key Decisions:

6.6.IIIa Action: Streamline budget control points to a single control point for expense funded activities at RL and combine line items at ORP for FY 2003 execution and FY 2004-08 formulation of the EM budget.

Responsible: EM-1, HQ-Chief Financial Office (CFO)

Commitments:

EM-1 briefs HQ-CFO by 05/10/02.

EM-1 and HQ-CFO brief OMB and get approval by 05/17/02.

EM-1 and HQ-CFO brief Congressional Appropriations staff by 05/31/02 prior to their mark-ups of the FY 2003 President's Budget Request

RL submits FY 2004 in existing control point structure by 06/20/02.

EM-10 realigns Field FY 2004 Integrated Project Accountability and Budget System budget submittal to single control point by 09/01/02 (prior to FY 2004 DOE budget submittal to OMB).

6.6.IIIb Action: Agree on multi-year funding profile to support accelerated cleanup initiatives

Responsible: EM-1, HQ-CFO

Commitments:

EM-1 briefs HQ-CFO by July 12, 2002.

EM-1 and HQ-CFO brief OMB and get approval by August 15, 2002.

EM-10 builds the agreed to multi-year funding profile into the FY 2004 Budget submittal to OMB.

IV. Uncertainties:

- Ability of DOE to gain OMB and Congressional approval for reduced budget control points

6.7 Streamlining Hanford Infrastructure

I. Milestones:

6.7.Ia Action: Complete study, implementation plan, and initiate action to move on-site contractor office personnel into off-site, commercially available office space, when cost effective. The implementation plan must include the methodology and a comprehensive analysis on a case-by-case basis.

Responsible: RL

Commitments:

Complete study and implementation plan by 9/30/02

Initiate personnel moves by 10/01/02

Complete relocation of 1700 office staff by 9/30/03. Future relocation goals will be based upon the implementation plan and the results of future analyses.

6.7.Ib Action: Finalize and implement the "City Manager" concept

Responsible: RL

Commitment: Implement "City Manager" concept by 9/30/02

II. GFIS:

6.7.IIa Action: Issue letter of direction to conduct relocation study and implement the results. In addition, the contractor may be incentivized to achieve specific goals and objectives.

Responsible: RL

Commitments:

Write contractor direction letter and promulgate to the Hanford site contractors, by 05/30/02

Evaluate potential incentives, within 30 days after receipt of the implementation plan

6.7.IIb Action: Issue letter of direction to implement the "City Manager" concept providing authority and responsibility for the total site infrastructure

Responsible: RL

Commitment: Write contractor direction letter and promulgate to the Hanford site contractors, by 09/30/02

III. Key Decisions:

6.7.IIIa Action: Determine if this direction is a change in scope and requires a baseline change request (BCR) to initiate and implement the plan. Also, determine as to the source and amount of funding required to initiate this activity.

Responsible: RL

Commitment: DOE to make decision on BCR or applicability, within 30 days after receipt of the contractor's study and implementation plan

6.7.IIIb Action: Reach agreement on the common site services and providers, whether the services are considered to be "base," "fixed," or "variable," and the level of funding required

Responsible: RL

Commitment: DOE to make decision on composite plan within 30 days after receipt of the contractor's final recommendation

IV. Uncertainties:

- Continuity of operations during the transition to off-site office space
- Agreement among the DOE and Hanford site contractors regarding the services, providers, required budgets, and allocation methodologies

Appendix B

Letters of Commitment

DOE/Contractor Commitment to Accelerated Closure at Hanford

The accelerated risk reduction and cleanup project at Hanford represents a transformational change in vision for the Site. It commits to work to accelerate risk reduction and cleanup of the Hanford Site by 2035, with a stretch goal of 2025. This can result in an acceleration of cleanup by at least 35 years and save over \$40 Billion from the current plan to substantially complete risk reduction and cleanup work at Hanford. This project will be one of the largest and most complex single nuclear cleanup project in the world. Success will require the commitment, as described below, of all the key contract parties.

Whereas, the principal corporate and Department of Energy executives of the Hanford Accelerated Risk Reduction and Cleanup Project understand the following:

- The Nation, the State of Washington, and the signing principals need to achieve a rapid acceleration of risk reduction and cleanup at the Hanford Site.
- The project has a high degree of internal and external institutional challenges.
- DOE sites, in general, and Hanford in particular, need to restructure to dramatically make this project more efficient and lower the cost of progress.
- Overcoming these challenges requires exceptional management capability, diversity, and depth.

Therefore, the principal corporate executives of the Hanford Team commit to work to the following:

- Develop an integrated life-cycle baseline that supports a 2035 completion of accelerated risk reduction and cleanup as well as a baseline that further accelerated this work to 2025.
- Develop a critical path to support accelerated cleanup that articulates key decisions, major milestones, significant known barriers, and funding requirements.
- Commit to improved implementation of Integrated Safety Management and continuing improvement of safety performance.
- Identify and support actions that result in more effective and efficient risk reduction and cleanup as well as elimination of unnecessary costs.
- Apply creative work execution strategies to achieve schedule breakthroughs in accelerated risk reduction and cleanup.
- Provide active parent company support to the site operating subsidiary and the team through proactive assessments of weaknesses relative to requirements and the infusion of necessary management talent and capabilities available from the corporation.
- Commit the management of the site-operating subsidiary to critically self assess their performance and take prompt corrective action.
- Work proactively with other site contractors.
- Ensure that the site's Science and Technology Program actively works to provide cost-effective, real time solutions to challenges in accelerating risk reduction and cleanup at Hanford.

And therefore, the principal Department of Energy executives commit to the following:

- Empower the Hanford Team to manage the site in a private sector model wherever practicable and to facilitate efforts to make accelerate risk reduction more effective and efficient;

- Restructure, realign, and focus contracts and incentives that drive performance and can deliver sooner than 2035;
- Become a better contract manager, ensuring all interactions with the contractor add value in achieving safe accelerated risk reduction mission;
- Restructure and realign Federal workforce, as necessary, to support accelerated cleanup;
- Develop and implement a predictable and reliable requirements, performance, and risk-based oversight and assessment process;
- Avoid or prevent any expansion in scope, mission, or requirements at the Hanford EM project that is inconsistent with achieving safe, accelerated cleanup;
- Improve Hanford internal business processes to ensure DOE supports and drives accelerated risk reduction and cleanup; and
- Ensure National Environmental Policy Act (NEPA) reviews are completed in cost-effective, technically-based manner that support timely decision making by DOE senior management and support the accelerated cleanup actions at Hanford.

Keith A. Klein, Manager
U.S. Department of Energy
Richland Operations Office

Harry L. Boston, Manager
U.S. Department of Energy
Office of River Protection

E. Keith Thomson, President
Fluor Hanford, Inc.

Michael C. Hughes, President
Bechtel Hanford, Inc.

Edward S. Aromi
President and General Manager
CH2M HILL Hanford
Group, Inc.

Ronald F. Naventi
Project Manager
Bechtel National, Inc.

Lura J. Powell, Director
Pacific Northwest National Laboratory

Lee T. Ashjian, President and General Manager
Hanford Environmental Health Foundation

DOE Commitment to Accelerated Closure at Hanford

The U.S. Department of Energy, Richland Operations Office and the Office of River Protection, agree to work to achieve the safe, accelerated risk reduction and cleanup of the Hanford Site by 2035, with a stretch goal of 2025. This can result in an acceleration of cleanup by at least 35 years and save over \$40 billion from the current plan. To achieve this goal

HANFORD will

- Develop an integrated Hanford life-cycle baseline schedule at the PBS level and a work breakdown structure (WBS) that completes accelerated risk reduction and cleanup by 2035, or sooner, not later than January 1, 2003.
- Develop a detailed, integrated life-cycle Hanford baseline that further refines the schedule, cost, and cleanup activity logic for an accelerated site cleanup by January 1, 2004.
- Develop a critical path schedule that articulates key decisions, major milestones, significant known barriers, and funding requirements.
- Develop a government-furnished services and items (GFS&I) list required to complete accelerated risk reduction and cleanup by 2035, or sooner.
- Report progress of accelerated risk reduction and cleanup project against the baseline.
- Continue to work proactively with the regulators and stakeholders in resolving site issues.
- Rapidly work issues with Headquarters that require DOE support or action to resolve.

DOE HEADQUARTERS will

- Make receiver sites available for waste and material needed to be shipped from Hanford in accordance with accelerated risk reduction and cleanup schedules.
- Provide required container certification in accordance with accelerated risk reduction and cleanup schedules.
- Actively assist Hanford in overcoming barriers and obstacles to expedite accelerated risk reduction and cleanup. This includes proactive work in areas such as safeguards and security, contracts, oversight, authorization basis, etc.
- Avoid or prevent any expansion in scope, mission, or requirements at the Hanford cleanup project that is not consistent with achieving safe, accelerated risk reduction and cleanup.
- Reform EM internal business processes to ensure the DOE supports and drives accelerated risk reduction and cleanup.
- Work with Hanford to develop and execute acquisition and contract strategies that improve contracting practices.
- Actively work to ensure that waste management policies are consistent with risk posed to human health and the environment.
- Ensure National Environmental Policy Act (NEPA) reviews are completed in cost-effective, technically based manner that support timely decision-making by DOE senior management and support the accelerated risk reduction and cleanup actions at Hanford.
- Ensure that the refocused Science and Technology Program actively works to provide cost-effective, real-time solutions to challenges in accelerating risk reduction and cleanup at Hanford.

- Work with DOI/USFWS to resolve National Monument cleanup action levels.
- Work with EPA to determine certain wastes do not require permanent isolation under 40 CFR 191.
- Work with Hanford, its regulators, and other sites on regulatory pathways and decisions for disposing of residual wastes in the Hanford tanks after the liquids and waste are removed and treated.