DOE/RL-2002-47
Rev. D

Performance Management Plan for the Accelerated Cleanup of the Hanford Site

United States
Department of Energy
P.O. Box 550
Richland, WA 99352

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U.S. Department of Energy, Richland Operations Office
U.S. Department of Energy, Office of River Protection

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Hanford's proposed plan has been approved by the
Assistant Secretary for Environmental Management,
Jessie Roberson, and was submitted to the
Office of Management and Budget in August.

Executive Summary

We, the U.S. Department of Energy Richland Operations Office and Office of River Protection, have developed this plan in partnership with our regulators and contractors and with input from area Tribal governments, the State of Oregon, the Hanford Advisory Board, and the public, to accelerate the completion of 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 clean up Hanford's environmental legacy. We define six strategic initiatives that require additional near-term investments to put us in position to end the Environmental Management mission at Hanford by 2035. 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. We also explain regulatory, technical and other uncertainties we face and provide the assumptions we have made.

Fundamental to our ability to succeed will be 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. The regulators played key roles in the initial development of the strategic initiatives, and following the release of DOE's May 1, 2002 draft we have worked closely with them to address areas of concern and move toward consensus on a path forward. We have also increased our efforts to work with the State of Oregon, area Tribal Nations, and stakeholders. This version of the plan has been strengthened as a result of their contributions.

While DOE must comply with many laws governing cleanup, the Tri-Party Agreement (TPA) is our primary compliance document. We are required to use the TPA process and to comply with its terms, including public involvement. We commit to providing a public comment period and regional public meetings whenever the substance of our accelerated plan is updated and public comment periods whenever our regulators and we agree to significant changes to Hanford's Tri-Party Agreement milestones. In addition, we are committed to protecting the trust interests of area Tribal Nations, complying with our treaty obligations, and consulting with area Tribal Nations prior to releasing decision-making documents to the public.

We also pledge to continue our commitment to not just finish our job here sooner, but to carry out high-quality, comprehensive cleanup that protects human health and the environment. To do so, we have developed six strategic initiatives that accelerate cleanup, reduce risk and put us on the path to completion by 2035.

1) We will restore the Columbia River Corridor, completing remediation of 50 burial grounds, 579 waste sites, 357 excess facilities, and 7 plutonium production reactors by 2012, reducing risk to the river and shrinking Hanford Site operations.

2) We will take several near-term actions to ensure the tank waste program ends by 2033 with closure of the double-shell tank farms: accelerate tank waste retrieval; complete tank waste treatment by 2028 by increasing the capacity of the planned Waste Treatment Plant (WTP) and using supplemental technologies for waste treatment and immobilization; and

demonstrate tank closure and start in earnest the process of closing tanks now. 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.

3) We will accelerate the cleanup of Hanford's other urgent risks by removing from the river's edge K-Basins spent nuclear fuel, sludge, debris and water 10 months early; stabilizing and securely storing our remaining plutonium nine years sooner; and demolishing the Plutonium Finishing Plant (PFP) seven years earlier. In addition, we will evaluate the benefits of moving our 1,936 high-radiation-level cesium and strontium capsules to a secure dry storage facility and seek a path to allow us to directly ship the capsules (non-vitrified) to a national geologic repository. This would avoid the risk, time and cost associated with processing the capsules for vitrification at the WTP.

4) We will accelerate treatment and disposal of mixed low-level waste and retrieval and shipment of transuranic (TRU) waste offsite 5 to 10 years ahead of current plans, and work with other DOE sites to ensure that disposal capability exists to meet their mission and closure schedules.

5) We will use regional or other waste site grouping strategies to clean up the Central Plateau's over 900 excess facilities (including the five massive plutonium separation and processing facilities or "canyons") and more than 800 non-tank-farm waste sites. We will use U Plant to demonstrate our ability to combine disposition of the canyon facilities in place (the Canyon Disposition Initiative) and remediation of the associated waste sites. With the exception of T Plant, which is required for final waste processing, we expect to disposition the canyon facilities nearly 14 years early.

6) We will protect groundwater resources by removing or isolating important contaminant sources on the Central Plateau, remediating the contamination sources exterior to the Central Plateau core zone, dramatically reducing the conditions that have the potential to drive contaminants into the groundwater, treating the groundwater, and integrating all site monitoring requirements. We will accelerate remediation of high-risk waste sites by five years.

Further, we are developing a site-wide program to address the planning and actions required to enable cost-effective long-term stewardship. With plans for long-term stewardship integrated into the cleanup, we can take the proper actions at the appropriate time to allow a smooth transition into necessary stewardship activities after the EM cleanup mission is complete.

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 incentivize 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.

This plan provides a basis for predictable, stable and sufficient funding to meet the commitments we have laid out. Setting achievable goals with realistic funding requirements, incentivized contracts, and measurable outcomes—and then doing the work as promised—is our best prospect for ensuring long-term funding to get this job done well by 2035 or sooner.

Table 1. Hanford Performance Management Plan Acceleration Goals

Cleanup Activity	Current Plan	Acceleration Plan
Complete cleanup	2070	2035 (2025?)
Start tank closure	2012 [a]	2002
Initiate Plutonium Finishing Plant (PFP) plutonium deinventory	2009	2003
Establish the site-wide Integrated Groundwater Protection Program	NA[b]	2003
Complete first tank waste retrieval and closure demonstration	2014 [a]	2004
Demonstrate supplemental tank waste technologies	NA	2004
Complete Plutonium Finishing Plant (PFP) plutonium deinventory	2014	2005
Retrieve, assay, and disposition 15,000 drums of buried suspect transuranic waste	2010	2006
Complete removal of K Basin spent nuclear fuel, sludge, debris, and water	2007[g]	2006
Move cesium and strontium capsules into dry storage	NA	2008[c]
Treat 14,000 cubic meters of mixed low-level waste	2012	2008
Demolish PFP	2016	2009
Achieve Waste Treatment Plant full performance	2018	2010
Complete U Plant regional closure	2025	2011
Initiate shipments of cesium/strontium capsules to national geologic repository	2040	2012
Complete River Corridor cleanup	2037	2012[e]
Complete remediation of high-risk waste sites[c]	2017	2012
Disposition all contact-handled legacy TRU[d]	2027	2015
Complete closure of 60 to 140 single-shell tanks [h]	2024	2018
Complete tank waste treatment	2048[f]	2028
Active portion of site	586 square miles (1,158 square kilometers)	~75 square miles (194 square kilometers) by 2012
Approximate cost	$90 billion	$50-$60 billion

[a] Current Tri-Party Agreement target date.

[b] Agencies have recently agreed to establish a new site-wide Integrated Groundwater Protection Program.

[c] Benefits of dry storage and disposal options to be evaluated in FY 2003.

[d] Remote-handled and large-item TRU will require processing through the M-91 facility. This will occur after 2015.

[e] Several discrete projects in the River Corridor will not be completed by 2012. The 618-10 and 618-11 burial grounds will be completed by 2018; several active facilities in the 300 Area related to the Pacific Northwest National Laboratory (PNNL) 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. The Fast Flux Test Facility is not yet part of the EM cleanup mission and is not included in this initiative.

[f] 2048 represents current DOE projection; the TPA date is 2028.

[g] Current TPA milestone is 7/31/07.

[h] The number of tanks depicted here represents a DOE goal and does not represent agreement with the Washington State Department of Ecology.

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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 too long to complete, require unrealistic levels of funding, and are slow to reduce near-term risk. We believe we can accelerate the completion of the Environmental Management (EM) cleanup mission 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 on the recommendations contained in the EM Top-to-Bottom Review conducted early in 2002 and the novel ideas that have emerged from the yearlong DOE, regulator, and contractor Hanford Cleanup Constraints and Challenges Team (C3T) process.

On March 5, 2002, DOE 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 that commitment. On June 28, 2002, Ecology, EPA and the State of Oregon's Office of Energy sent a letter to EM's Assistant Secretary Jessie Roberson expressing support for a final plan that incorporated the work of the C3T into the strategic initiatives. We are confident we have done so and believe this plan demonstrates a true partnership with our regulators to accelerate cleanup. We are now ready to deploy it to drive improved cleanup performance to protect human health and the environment.

The *Performance Management Plan for the Accelerated Cleanup of the Hanford Site* is the result of fundamental changes underway at Hanford for some time, and a renewed urgency to finish a high-quality and comprehensive cleanup. These changes have resulted from improvements in defining and focusing the work, developing and implementing contracts to perform it, and working with the Tribal governments and regulator and stakeholder communities – which have long been pushing for faster compliant 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 Hanford's strengths and 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 are still considerable uncertainties to be resolved. Our success will require, among other things, the continued partnership and trust of our regulators; predictable, stable, and sufficient funding; excellent planning and coordination among various agencies, contractors, and constituent groups; further reform and discipline within DOE; application of new technologies; an ability to manage the continuing uncertainties and schedule risks; coordination and cooperation with other DOE sites on disposition of wastes; and additional determination, creativity, and innovation.

Our plan is not intended to, in any way, detract from or impact the primacy of the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement), which articulates the compliance requirements and specific agreements among the agencies. It also establishes, and we further commit to, opportunities for public involvement for all significant TPA changes. In addition to significant TPA changes, we will present this final plan at the annual fall State of the Hanford Site meetings across the region and post it on our website. At our public budget meetings in Spring 2003, we will provide information on how this plan and our new cleanup baseline are linked and obtain public comment on both. Also, we will follow the TPA Community Relations Plan to ensure broad, inclusive public involvement as cleanup progresses.

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 (1,158 square kilometers), Hanford is about half the size of the state of Rhode Island. Over its 40 years of operations, the site produced approximately 74 tons (64 metric 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 more than 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 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 (11 metric 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 (750,000 cubic meters) of buried or stored solid waste in 175 waste trenches;
- About 270 billion gallons (1 trillion liters) of groundwater contaminated above EPA drinking water standards, spread out over about 80 square miles (208 square kilometers). The contaminants include 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, containing roughly 130 million curies of material, in water-filled pools;

- More than 1,700 identified waste sites and 500 contaminated facilities; and

- Contamination from the discharge of more than 450 billion gallons (1.7 trillion liters) of liquid into the soil column over 50 years of site operations.

For much of the 1990s, physical progress was slow as we completed the characterization and planning necessary to transition Hanford from defense nuclear production to environmental cleanup and 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 cleanup progress.

Building Momentum

DOE, Ecology, and EPA -- partners in the 1989 Tri-Party Agreement for site cleanup -- have worked hard to bring a well-defined and manageable focus to Hanford cleanup: 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.

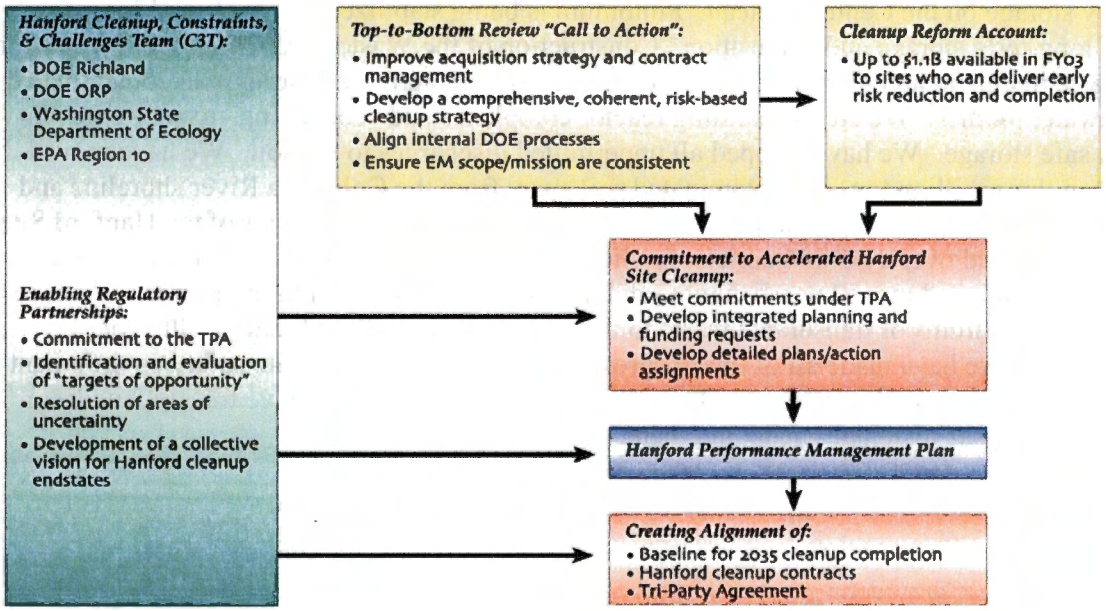
We are making substantial progress toward reducing risk and achieving these cleanup outcomes. We have resolved major underground radioactive tank waste safety issues and all tanks have been removed from the Congressional Watch List. We have also accomplished interim stabilization of the single-shell tanks by removing the pumpable liquids from 131 of the 149 tanks. The Plutonium-Uranium Extraction Plant (PUREX) and B-Plant chemical processing plants were the first in the DOE complex 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, dry storage on the Central Plateau. Plutonium is being stabilized and packaged for safe, secure, long-term storage and disposition. Construction of the Waste Treatment Plant (WTP) for tank waste treatment and immobilization has begun. We are actively dealing with contaminated groundwater plumes. We are dismantling 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 (ERDF) near the center of the Hanford Site. We have removed over a million curies of radioactivity from contaminated facilities near the City of Richland, and moved nearly a thousand metric tons of excess uranium offsite. We have sent nearly 400 drums of transuranic waste to the Waste Isolation Pilot Plant (WIPP) for disposal. And we have made all of this progress while transforming the site safety environment to be among the best in the DOE complex. We can rightfully claim we have transitioned from just managing risks to actually reducing them.

Call to Action

But, working well to the existing baseline schedule for Hanford cleanup isn't enough. As emphasized in the EM Top-to-Bottom Review and reinforced by DOE's proposal for the Cleanup Reform Account, a 2070 cleanup completion is too late and a cost of $90 billion is too much. Now is the right time for us to accelerate risk reduction and cleanup, and with our work over the last few years, we are well positioned to do so. First, we can leverage the experience we have gained and physical progress we have made. Second, we have renegotiated two of our major contracts to be more 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 the C3T process. Through a team of senior agency executive managers that includes the DOE Richland Operations Office (RL) and 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



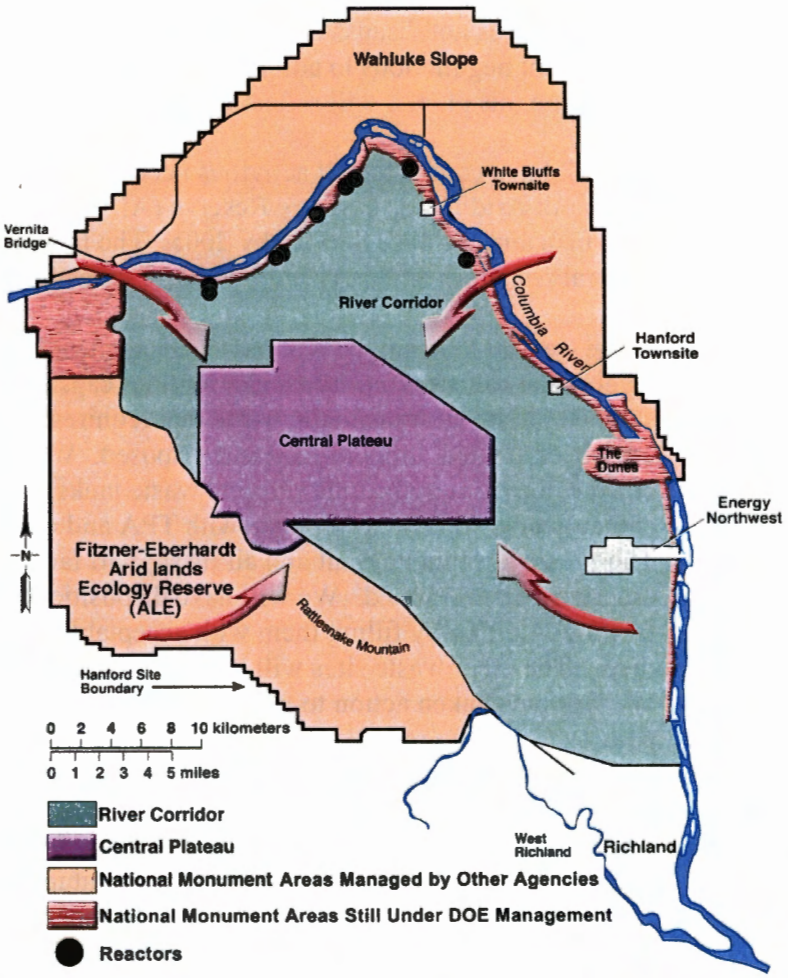
3.0 The Hanford Site in 2035

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. It will mean the end of DOE's EM cleanup mission at Hanford and a major taxpayer liability – currently around $2 billion per year.

Figure 2. Shrinking the Hanford Site

The "shrinking" of active Hanford cleanup operations to the Central Plateau is depicted in Figure 2.



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 make up the Columbia River Corridor will be cleaned to the levels in the approved Records of Decision by 2012. Nearly 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 Area and the majority of the 300 Area 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 100 Area land surface will be cleaned to a level suitable for residential use, and the 300 Area cleaned to a level suitable for industrial 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 limited DOE activities remaining in the River Corridor. Pending update of the Reactor Disposition EIS, the reactor cocoons will remain in place through 2035. (There are a small number of adjacent waste sites that will be addressed as part of the final reactor disposition.) Several facilities in the 300 Area will still be operating to service the ongoing cleanup mission and the Pacific Northwest National Laboratory. Cleanup of the 618-10 and 618-11 burial grounds, which contain very-high-radiation-level transuranic waste, will start following the design and development of retrieval treatment and technologies and will be complete by 2018. Remediation of the groundwater and springs is expected to continue past 2012.

This plan does not discuss deactivation of the Fast Flux Test Facility (FFTF). Tri-Party Agreement negotiations to add FFTF to the Hanford cleanup program are under way. When we update this plan, it will reflect the result of those negotiations.

We will have completed all activities necessary for transfer of nearly all of the Fitzner-Eberhardt Arid Lands Ecology Reserve (ALE), the Riverlands, and the Wahluke Slope to the U.S. Fish and Wildlife Service by 2005. The federal government will continue to protect cultural resources and carry out its trust responsibilities.

- In the Central Plateau, we will have packaged and shipped offsite all stored plutonium, high-level waste canisters, cesium and strontium capsules, and spent nuclear fuel. We will have shipped offsite all transuranic waste that requires retrieval. Low-activity tank waste will have been treated, immobilized and disposed. We will have completed waste retrieval and closure activities at the underground waste tanks, associated ancillary equipment and contaminated soils in accordance with TPA and other applicable regulatory requirements. The Waste Treatment Plant and all its support facilities will have been demolished or otherwise dispositioned. We will have dispositioned Hanford's five massive canyon facilities – either by filling them with acceptable waste and capping them, or demolishing them. The other waste sites will have been removed, capped, or otherwise dispositioned. We will have taken action to treat and protect groundwater resources. We will have petitioned EPA to remove the Central Plateau's 200 Area from the National Priorities List and will have a long-term monitoring plan in place.

  The Central Plateau's core zone (the 200 Areas including B Pond and S Ponds) will have an "industrial use scenario" for the foreseeable future. Waste Sites outside the Core Zone but within the Central Plateau (200 N, Gable Mountain Pond, B/C Crib Controlled Area) will be remediated and closed based on an evaluation of multiple land use scenarios to optimize land use, institutional control cost, and long-term stewardship. The industrial use scenario will not be used to create a national "sacrifice zone." All sites will be in full compliance with cleanup requirements and will be fully protective of human health and the environment.

- 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 compartments, stewardship, and perhaps ongoing DOE waste disposal operations. There would also be regulatory, engineering and institutional controls in place and continuation of ongoing groundwater monitoring . There will be a federal responsibility at Hanford for generations to come, but DOE's EM cleanup work would be complete.

In developing the initiatives described in this plan, we (along with our regulators) have had to tackle Hanford's myriad of cleanup issues in a manner that does not compromise the cleanup itself, and, at the same time, enables us to greatly accelerate cleanup schedules and achieve major lifecycle cost savings. The fact that we are open about wanting to reduce the taxpayer's long-term investment in Hanford cleanup has raised the concern that meeting this objective will require decreasing the quality of the work we do.

Neither our regulators nor we want or intend that. Don't mistake our commitment to cost and schedule savings for evidence that the federal government is any less committed to Hanford cleanup. In fact, it is because we want both high-quality cleanup and to reduce the long-term taxpayer liability that we have had to "break the mold" and find new ways to get the job done well. Under this plan, by 2035 we will have completed a cleanup that is both comprehensive and high quality. Each phase of the cleanup will have been accomplished in a manner fully compliant with all requirements and cleanup standards.

In particular, we want to underscore our commitment to give protection of the Hanford groundwater the priority it deserves. To that end, we have created a strategic initiative that will help drive a new and comprehensive site-wide groundwater remediation program that will focus both on the cleanup of contaminants that have reached or may reach Hanford aquifers, as well as all aspects of Hanford Site work that affect vadose zone contamination and groundwater protection.

By ensuring our compliance with the Tri-Party Agreement and focusing on risk reduction and real physical progress, we can achieve by 2035 a high-quality and comprehensive cleanup that is fully protective of the environment, and of which the federal government, state, Tribes, and citizens of the Pacific Northwest can truly be proud.

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 builds on our transformation from managing risk to actually reducing risk. We will focus on providing high returns on near-term investment, developing a more closure-driven way of looking at our ongoing programs in the Central Plateau (like groundwater and waste sites) and re-engineering our business strategy.

We will pursue an integrated, comprehensive approach to accelerating cleanup by using several enabling elements:

- Focusing our resources on activities that accelerate the reduction of risk to human health and the environment;
- Working closely with our regulators to coordinate regulatory decisions and cleanup activities;
- Involving area Tribal Nations and the State of Oregon early in planning processes and providing transparent decision-making for them and the public;
- Using Integrated Safety Management (ISM) principles as part of our contracts and lifecycle project planning to help us identify what work is appropriate and desirable, and to eliminate unnecessary work activities, protect workers and remove outdated or inappropriate requirements;
- Deploying comprehensive business approaches that add to our confidence that we will succeed; and
- Increasing the urgency to get done with our cleanup mission.

This section details the rationale, contracting approach and cost, schedule, regulatory, and technical risks associated with six strategic cleanup acceleration initiatives, including:

Strategic Initiative 1 – *Accelerate Columbia River Corridor Cleanup by More Than 20 Years to 2012.* We will restore the Columbia River Corridor, completing remediation of 50 burial grounds, 579 waste sites, 357 excess facilities, and 7 plutonium production reactors by 2012, reducing risk to the river, and shrinking Hanford Site operations.

Strategic Initiative 2 – *Accelerate Tank Waste Treatment Completion by 20 Years.* We will take several near-term actions to ensure the tank waste program ends by 2033: accelerate tank waste retrieval; complete tank waste treatment by 2028 by increasing the capacity of the planned WTP and using supplemental technologies for waste treatment and immobilization; and

demonstrate tank closure and start in earnest the process of closing tanks now. 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.

Strategic Initiative 3 – *Accelerate Stabilization and De-Inventory of Nuclear Materials.* We will accelerate the cleanup of Hanford's other urgent risks by removing from the river's edge K-Basins spent nuclear fuel, sludge, debris and water 10 months early; stabilizing and securely storing our remaining plutonium nine years sooner; and demolishing the Plutonium Finishing Plant (PFP) seven years earlier. In addition, we will evaluate the benefits of moving our 1,936 high-radiation-level cesium and strontium capsules to a secure dry storage facility and seek a path to allow us to directly ship the capsules (non-vitrified) to the national geologic repository. This would avoid the risk, time and cost associated with processing the capsules for vitrification at the WTP.

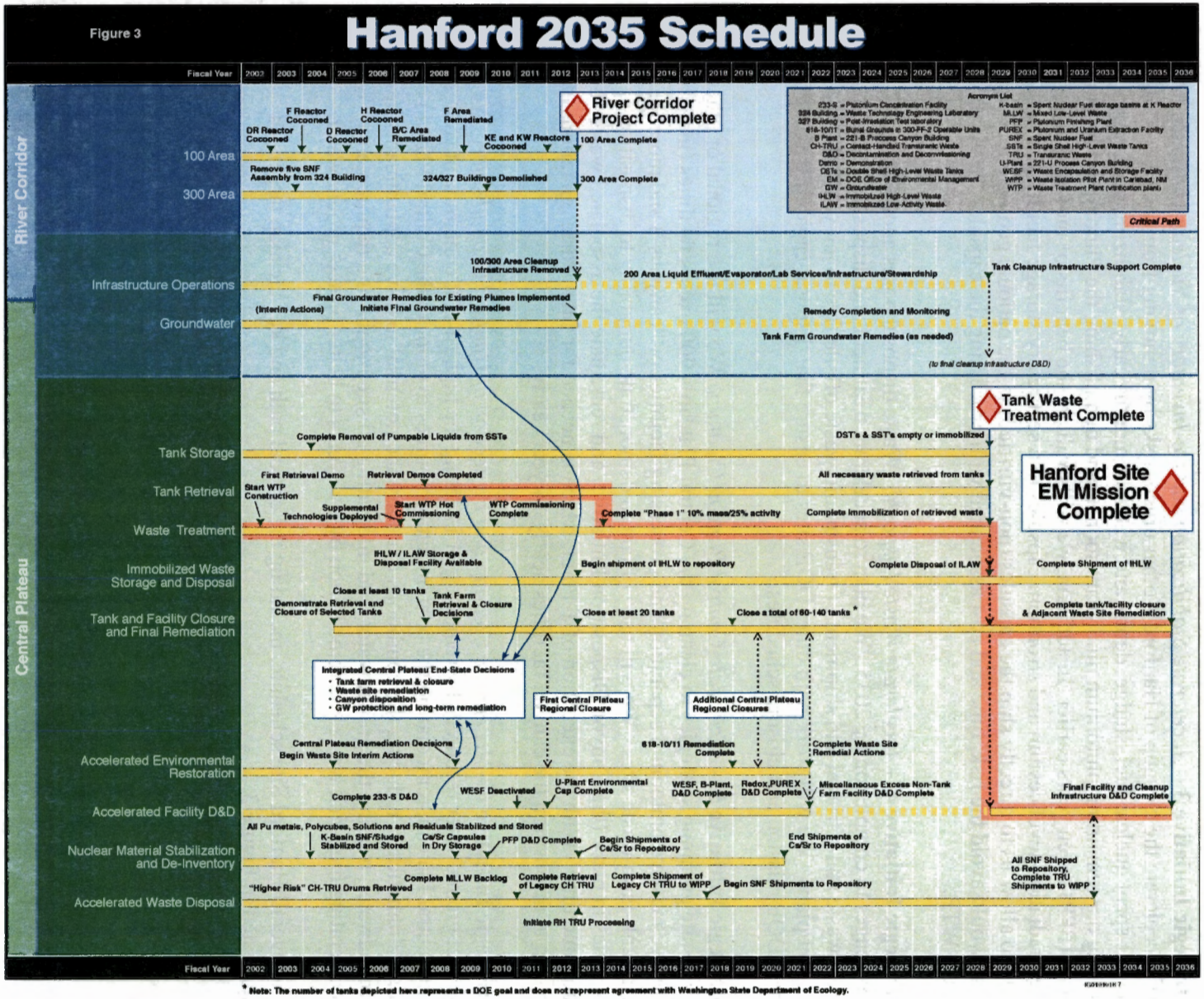
Strategic Initiative 4 – *Accelerate Waste Disposal.* Waste disposal poses another set of challenges to completion by 2035. We plan to accelerate treatment and disposal of mixed low-level waste and retrieval and shipment of transuranic waste offsite five to ten years ahead of current plans. We will work with other DOE sites to ensure that disposal capability exists to meet DOE mission and closure schedules.

Strategic Initiative 5 – *Accelerate Central Plateau Cleanup.* We will use regional or other waste site grouping strategies to clean up the Central Plateau's 900 excess facilities (including the five massive plutonium separation and processing facilities or "canyons") and more than 800 non-tank-farm waste sites. We will use U Plant to demonstrate our ability to disposition canyon facilities in place (the Canyon Disposition Initiative) and remediate the associated waste sites at the same time. With the exception of T Plant, which is needed for final waste operations, we expect to disposition the canyon facilities nearly 14 years early.

Strategic Initiative 6 – *Accelerate Cleanup and Protection of Hanford Groundwater.* We will protect groundwater resources by removing or isolating the highest-risk contaminant sources on the Central Plateau, remediating the contamination sources exterior to the Central Plateau core zone, dramatically reducing the conditions that have the potential to drive contaminants into the groundwater, treating the groundwater, and integrating all site monitoring requirements. We are accelerating high-risk waste site remediation by five years to better protect groundwater.

The overall Hanford Site schedule, including the critical path and key cleanup targets, is illustrated in Figure 3.

Figure 3



* Note: The number of tanks depicted here represents a DOE goal and does not represent agreement with Washington State Department of Ecology.

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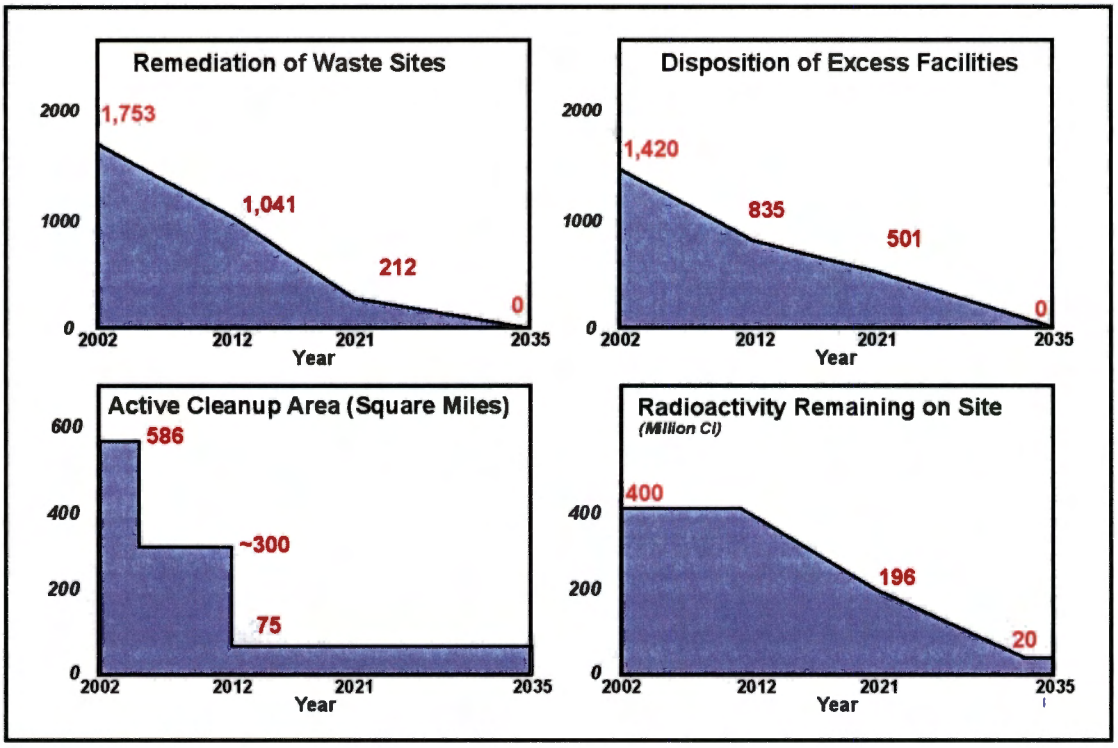
Figure 4 depicts selected metrics associated with cleanup acceleration. Remediation of waste sites, disposition of excess facilities, shipment of radioactive materials and wastes offsite, and physical reduction of the active cleanup areas are all measures of the real, near-term risk reduction actions 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 to other agencies would happen decades later than shown on Figure 4.

Figure 4. Selected Accelerated Cleanup Plan 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 waste remediation and closure. Finally, we must establish risk exposure scenarios considering future land uses, including Tribal use scenarios, and the values of stakeholders.

Risk Framework

Our overall Central Plateau cleanup strategy will provide the basis for arriving at a consistent and logical set of cleanup decisions to ensure effectiveness, protection of human health and the environment, and efficiency. Pursuant to the agreements reached through our C3T process, we have agreed to use a risk framework that supports our decision strategy as follows:

1. The Central Plateau core zone (200 Areas including B Pond (main pond) and S Ponds) will have an industrial use scenario for the foreseeable future.

2. The core zone will be remediated and closed, allowing for other uses consistent with an industrial use scenario (e.g., environmental industries) that will maintain active human presence in this area, which in turn will enhance the ability to maintain the institutional knowledge of the wastes left in place for future generations. Exposure scenarios used for this zone should include a reasonable maximum exposure to a worker/day user, to possible Native American users, and to intruders. An assumption of industrial land use will be used to set cleanup levels.

3. DOE will follow the required regulatory processes for groundwater remediation (including public participation) to establish the points of compliance and remedial action objectives. We anticipate that groundwater contamination under the core zone will preclude beneficial use for at least 150 years, which is the period of waste management and institutional controls. We assume the tritium and iodine-129 plumes beyond the core zone boundary will exceed the drinking water standards for the next 150 to 300 years (less for the tritium plume). At the same time, we expect other groundwater contaminants will remain below, or be restored to, drinking water levels outside the core zone.

4. No drilling for water use or otherwise will be allowed in the core zone. We will assess the risk to human health and environment based on an intruder scenario. .

5. Waste Sites outside the core zone but within the Central Plateau (200 N, Gable Mountain Pond, B/C Crib Controlled Area) will be remediated and closed based on an evaluation of multiple land use scenarios to optimize land use, institutional control cost, and long-term stewardship.

6. Other land use scenarios (e.g., residential, recreational) may be used for comparison purposes to support decision-making, especially for:
    a. The post-institutional controls period (after 150 years).
    b. Sites near the core zone perimeter to analyze opportunities to further shrink the size of Hanford.
    c. Early, precedent-setting closure/remediation decisions.

7. This framework does not deal with the tank waste retrieval decisions.[1]

We are also developing a sitewide 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 we pursue 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. We will ask area Tribes and our stakeholders to participate in the development of these strategies to ensure we

[1] Tank waste retrieval decisions will be made in compliance with existing regulatory and TPA requirements.

address their concerns and consider their ideas, especially regarding the long timeframe for which some of these systems will need to be in place.
Finally, we are developing a sitewide long-term program to address the planning and actions needed for cost-effective long-term stewardship. With long-term stewardship integrated into the cleanup, proper actions can be done at the appropriate time during cleanup to allow a smooth transition into necessary stewardship activities after cleanup completion. To develop this program, we are considering: managing any residual contamination after cleanup completion; assuring maintenance of necessary controls; managing site records needed for stewardship; managing remaining and continuing site biological, natural, and cultural resources; using new science and technology; and providing necessary post-cleanup facilities and services. We have already held several workshops with Tribes, regulators, and stakeholders, and will continue to develop and then finalize the Hanford Long-Term Stewardship Program.

Critical to our success in each of the 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 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.

Strategic Initiatives

4.1.1 STRATEGIC INITIATIVE 1 - ACCELERATE COLUMBIA RIVER CORRIDOR CLEANUP BY MORE THAN 20 YEARS TO 2012

Description

This strategic initiative combines the River Corridor cleanup actions (excluding groundwater), places them in one contract, and accelerates them. The River Corridor Project includes 50 burial grounds, 579 wastes sites, 357 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 one mile of the river or inside the area designated as the Hanford Reach National Monument.

Interim Records of Decision (RODs) currently exist for the majority of the work on the River Corridor. The planning assumption is that work completed under these interim actions will be adequate to meet the requirements of the final RODs. In order to issue final proposed plans and RODs, we will need to perform final baseline risk assessments. In addition, we will disposition a number of facilities per the joint EPA-DOE policy using the CERCLA non-time-critical removal program.

To accelerate River Corridor cleanup, we will "cocoon" the remaining six reactors for interim safe storage pending a final decision on their disposal; remove and revegetate 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 and enable us to perform the risk analyses and the final RODs necessary to remove these areas from the National Priorities List (NPL). We will implement the required groundwater remedies through Strategic Initiative 6 and the Groundwater Protection Program. Institutional controls will be closely coordinated with the Hanford Long-Term Stewardship Program. We also intend to write a document to manage the interface between the River Corridor Project and the Groundwater Protection Program.

Accelerating this work to achieve compliant, high-quality cleanup is a priority for Tribal Nations and Hanford stakeholders, and the Tri-Parties have agreed to an accelerated schedule for the River Corridor Project. They have asked that we address the most urgent risks in the River Corridor first, and to that end, we will focus on 100 Area cleanup prior to significant work in the 300 Area. We have separated this scope and structured it as a discrete project, and in late 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.

The remediation of the burial grounds may create waste that requires additional treatment or disposal beyond what is currently assumed. We are managing this risk by providing a temporary

storage facility at ERDF to allow the short-term management of waste prior to treatment and disposal.

Completing River Corridor cleanup more than 20 years earlier than the current baseline will save more than $1 billion compared to initial estimates. When we complete the work and minimize River Corridor risks to human health and the environment, DOE will petition EPA to remove the River Corridor (100 Area and the majority of the 300 Area) from the 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 corridor over 20 years earlier than planned. The Hanford Reach National Monument is an important and sensitive location for Pacific Northwest salmon recovery. Stakeholders, Tribal Nations, and regulators have proclaimed cleanup along the Columbia River, along with tank waste remediation, to be the highest priorities for cleanup. The River Corridor Initiative will remove or provide for long-term stabilization of nearly all remaining wastes that can pose a threat to 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 (RFP) for this contract has been issued and proposals were received May 20, 2002, with award anticipated in late 2002. The contract scope is remediation activity end points and 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. The RFP and contract do not specify a required completion date by 2012, but the contract is structured to allow acceleration of work if adequate funding is provided.

Regulatory Alignment Strategy

All 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 agreement for the 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 streamline the River Corridor cleanup. For example, we will coordinate 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 coordination has the potential to save millions of dollars. In addition, we believe this cleanup will comply with our treaty obligations to area Tribal Nations.

4.1.2 STRATEGIC INITIATIVE 2 - ACCELERATE TANK WASTE TREATMENT COMPLETION BY 20 YEARS, ACCELERATE RISK REDUCTION AND SAVE UP TO $20 BILLION

Overview

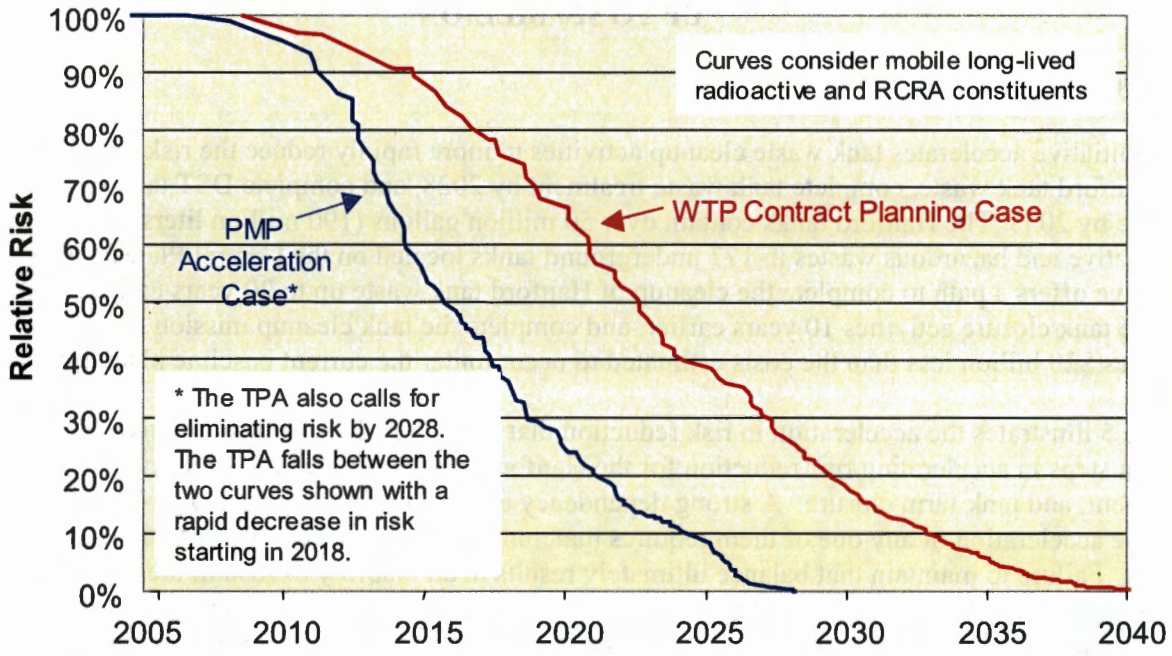
This initiative accelerates tank waste cleanup activities to more rapidly reduce the risk posed by the Hanford tank waste, complete tank waste treatment by 2028, and complete DST tank farm closure by 2033. The Hanford tanks contain over 50 million gallons (190 million liters) of radioactive and hazardous wastes in 177 underground tanks located on the Central Plateau. This initiative offers a path to complete the cleanup of Hanford tank waste up to 20 years earlier, initiate tank closure activities 10 years earlier, and complete the tank cleanup mission for as much as $20 billion less than the costs estimated to occur under the current baseline planning.

Figure 5 illustrates the acceleration in risk reduction that would result from this initiative. The critical steps in accelerating risk reduction for the Hanford tank farms are waste retrieval, waste treatment, and tank farm closure. A strong dependency exists among those three actions such that the acceleration of any one of them requires matching accelerations by one or both of the others. Failure to maintain that balance ultimately results in an inability to sustain the accelerated pace. For example, waste cannot be treated more rapidly on a sustained basis than feed is made available via retrieval and feed delivery. The reverse is also true. Single shell tank (SSTs) waste cannot be retrieved on a sustained basis unless double shell tank (DST) space is made available to receive the retrieved wastes via waste treatment. Similarly, sustained tank farm closures require continued waste retrievals at an equivalent or greater pace which are, in turn, dependent upon waste treatment. Thus, the acceleration in risk reduction would be the outcome of Strategic Initiative 2's three key elements, conducted in parallel:

- **Key Element 1** – Accelerate retrieval of tank wastes to achieve the higher rates needed to feed the enhanced WTP and supplemental treatment operations to meet 2028.
- **Key Element 2** – Complete the treatment of tank waste by 2028 using the planned WTP supplemented by parallel treatment and immobilization approaches both within and external to the WTP.
- **Key Element 3** – Accelerate the tank farm closure process, and begin closing tanks 10 years earlier than previously planned.

The key element discussions that follow this overview describe the steps we plan to take to achieve the accelerated risk reduction profile in Figure 5. Implicit in our commitment to accelerating risk reduction is that the quality of cleanup will not be compromised. All three agencies share the key goals of maintaining the environmental quality of Hanford tank waste cleanup, achieving real near-term progress, accelerating risk reduction, substantially reducing the time required to complete cleanup, and commencing a long-term protective management phase to ensure the effectiveness of the steps taken.

Figure 5. Conceptual Acceleration of Risk Reduction via HPMP Strategic Initiative 2



This chart depicts the percentage of risk remaining based upon projected treatment and closure actions where 100% represents approximated risk (airborne and groundwater) if no actions were taken and decreases are the result of retrieval, treatment, and closure actions projected during any given year, e.g., waste stabilized in the WTP and tanks closed. Once waste is placed in a final form the risk is eliminated for purposes of this chart, i.e., the risk associated with post-treatment storage, disposal, transportation, etc. are ignored for the purposes of this comparison. The "WTP Contract Planning Case" curve is based upon a Phase 1 WTP with 1.5 MTG/D HLW and 30 MTG/D LAW followed by an expansion to 6 MTG/D HLW and 60 MTG/D LAW in 2018. The "PMP Acceleration Case" curve is based on the actions that constitute Strategic Initiative 2 of this plan.

Source: Developed using data from the June 30, 2001 Hanford Monthly Tank Summary Report and the October 2000 Best Basis Inventory; tank-by-tank risks by T.Hohl considering air and groundwater pathways; retrieval sequence from RPP-8554, 2001, Combined SST Retrieval Sequence and DST Space Availability, Rev 0; and approximated risk reduction comparisons by S. Short based on assumed retrieval, treatment, and closure schedules.

The steps in this initiative have benefited greatly from discussions that have occurred with our regulators, affected Tribal Nations, and our stakeholders since our May 1st draft plan was issued. This does not mean that we have reached agreement on all of the details; notwithstanding our general agreement regarding the overall cleanup objectives and regulatory framework, we will not be able to reach agreement on a number of details until we learn more from field experience about our technical capabilities, our physical limitations, and case-by-case situations that exist within the tank farms. Nonetheless, we are all better aligned relative to the principles and processes that need to be followed and these are key enablers of progress.

Key Element 1 – Accelerate Tank Waste Retrieval

One of the key attributes of any plan to accelerate the River Protection Project is the ability to retrieve and transfer waste from the DSTs and SSTs to support on-time and reliable delivery of waste to the WTP and supplemental treatment systems. Waste must be retrieved from the SSTs on a schedule that supports the accelerated closure of these tanks. Storage space in the DST system must be available for the retrieved SST waste until it can be immobilized. This key element integrates accelerated waste retrieval, feed delivery, and enhanced DST storage. We will:

- Develop a Target Baseline which integrates accelerated retrieval, treatment, immobilization and closure and provides the foundation for future planning,
- Complete current aggressive SST waste retrieval demonstration schedules,
- Develop a revised SST sequence, balancing risk reduction, treatment feed demands, accelerated closure, and DST space, and
- Make available up to 3 million gallons of DST space through space utilization initiatives.

(a) Double-Shell Tank Waste Retrieval and Sequencing

The waste contained within the tanks is a mixture of chemical and radioactive constituents in three basic forms: liquid, saltcake, and sludge. The liquid waste is generally saturated salt solutions containing a fraction of the soluble radionuclides present in the waste tanks. Saltcake waste is a solid, consisting primarily of sodium nitrate/nitrite crystals that resulted from removal of water from neutralized waste supernatant liquid and is soluble in water. Sludge consists of hydrated metal oxides that resulted from the neutralization of nitric acid waste streams and is insoluble in water. Each of the tanks contains a unique blend of these waste forms.

DSTs are scheduled to provide initial waste to the WTP for immobilization. Transfer and mixer pumps are being installed in the DSTs to dissolve soluble solids and mobilize insoluble solids providing high level waste to the treatment plant for immobilization. These pumps in conjunction with the waste transfer piping provide a reliable means of transferring waste from the DSTs to the WTP. The sequence of tanks planned for early feed to the WTP has been established and the tanks have been sampled and characterized to provide a better understanding of waste constituents and properties.

The increased treatment rate of waste by the enhanced WTP and supplemental treatment technology requires special consideration and integration with the waste retrieval/transfer systems. Acceleration of the installation and operation of these retrieval systems is necessary for meeting the initiatives of this acceleration plan. The River Protection Project System Plan (ORP-11242, Rev 0) identifies the required schedule acceleration to enable early and enhanced feed to the WTP. Beyond the acceleration of the first tanks, planning is needed to effectively match the enhanced WTP operating needs, establish feed for supplemental technologies outlined in Key Element 2, and enable the accelerated retrieval and closure of the SST farms. The use of SST waste as earlier feed to these treatment processes will be examined to reduce the overlap of concurrent construction activities to stabilize the funding needs while maintaining the aggressive

schedule. A target baseline will be developed, which effectively integrates these requirements and will serve as the basis for the future tank waste retrieval sequence.

(b) Retrieval of Waste from SSTs

Several SST retrieval methods are being evaluated and planned for demonstration. Because of the differing nature of the waste and tank configurations, there is not a single retrieval system suited for all applications. The liquid waste contained in the SSTs is currently being pumped to the DSTs through the saltwell pumping program and is scheduled for completion by 2004, an aggressive but achievable schedule. Of the many systems and potential configuration options that have been considered for solids retrieval, "past-practice sluicing" is the only system with recent experience in retrieval of Hanford SSTs. This system was most recently applied in the retrieval of Tank 241-C-106 in FY 1999.

Past-practice sluicing is the introduction of a liquid at high pressures and volumes, typically recycled supernatant, into the waste matrix to break apart and suspend the solids material into the sluicing fluid for subsequent transport out of the tank. The sluicing liquid is introduced through a nozzle or nozzles inserted through risers. The slurry is retrieved from the tank by a pump that is lowered through an available riser into the slurry pool formed by the sluicing action on the top of the solids. The pump is lowered incrementally to the bottom of the tank as the sluicing action dislodges and suspends the solids. This system proved effective in the retrieval of Tank 241-C-106, retrieving an estimated 97% of the solids in the tank, however, sluicing requires the addition of large volumes of liquid into the tanks during the retrieval operations. Lower liquid volume retrieval systems will be necessary to reduce the risk of leakage during the retrieval of waste from the tanks.

For SSTs that contain primarily saltcake type waste, saltcake dissolution appears to be a promising retrieval solution. Saltcake dissolution is the addition of a solvent (primarily water) to a salt waste (primarily sodium salts) to dissolve the solids; subsequently liquid is removed from the tank. Several configuration variations and operations approaches available under this technique are being evaluated for deployment at the Hanford Site. Controlled addition of the solvent and coordinated removal of the liquid is planned to minimize the column of liquid present in the tank and to reduce the potential for leakage. This has been referred to as the low-volume density gradient (LVDG) method. This method will be demonstrated in Tank 241-S-112. An early "proof-of-concept" test of LVDG method may to be conducted in tank 241-U-107 in conjunction with or following planned saltwell pumping efforts under the Interim Stabilization Program. A Topographical Mapping System also is planned to be demonstrated in Tank 241-U-107 to evaluate the effectiveness of the saltcake dissolution process.

Another retrieval technology scheduled for early deployment is fluidic mixing. Fluidic mixing, also known as pulse jet mixing, typically involves the use of large-diameter pulse tubes vertically mounted in the tank and immersed in the tank fluid. A vacuum is applied to the pulse tube, using a jet pump with air as the motive fluid. Sludge and liquid fill the pulse tube, and when the tube is full, the jet is turned off and the tube is vented or charged. The fluid in the tube is forced back into the tank and imparts the mixing action or is directed to a receiving tank for transfer and processing. The system operates with no moving parts in contact with the wastes, low

maintenance, and require reduced water addition to the tank compared to past-practice sluicing. The system was successfully deployed at Oak Ridge National Laboratory. This method currently is planned for use in tank 241-S-102.

Confined-sluicing and robotic technology is a fourth retrieval technology for the SSTs, focusing on retrieval of sludges. Retrieval is accomplished by introduction of a small vehicle into the tank environment. The robotic crawler or In-Tank Vehicle (ITV) is planned for use in tank 241-C-104. The ITV is equipped with a screw pump and liquid jets, and will move waste to a centrally located mast. The mast will be equipped with a vacuum system capable of mobilizing the waste out of the tank to an intermediate transfer vessel for subsequent transfer to a DST. Retrieval of sludge from SSTs also allows a confined-sluicing approach whereby sluicing nozzles would be mounted on an ITV and direct a low volume of high-pressure sluicing fluid onto the waste in the immediate proximity of the ITV. The ITV could also contain a slurry pump capable of drawing the resulting waste slurry out of the tank at a rate determined to minimize free-liquid accumulation. The ITV approach reduces the amount of freestanding liquids in the tank, thereby reducing the potential for leaks during retrieval. The ITV could also serve as a platform to mount other tools that can be used to dislodge compact wastes or waste adhering to sidewalls or appendages.

The combination of these multiple retrieval techniques provides confidence in the ability to retrieve waste from the SSTs to meet the accelerated retrieval and closure needs. In addition, a Cold Test Facility has been constructed and is in operation at the Hanford Site allowing the testing of these retrieval systems in a non-hazardous environment before deployment in the tanks. The ability to deploy these systems and gain valuable experience working with them prior to installation in the tank provides additional confidence in the ability for these systems to function as needed to retrieve waste from the SSTs.

(c) Double-Shell Tank Space Utilization

One important consideration in acceleration of SST waste retrieval is adequate space in the DSTs for storage of the retrieved waste.

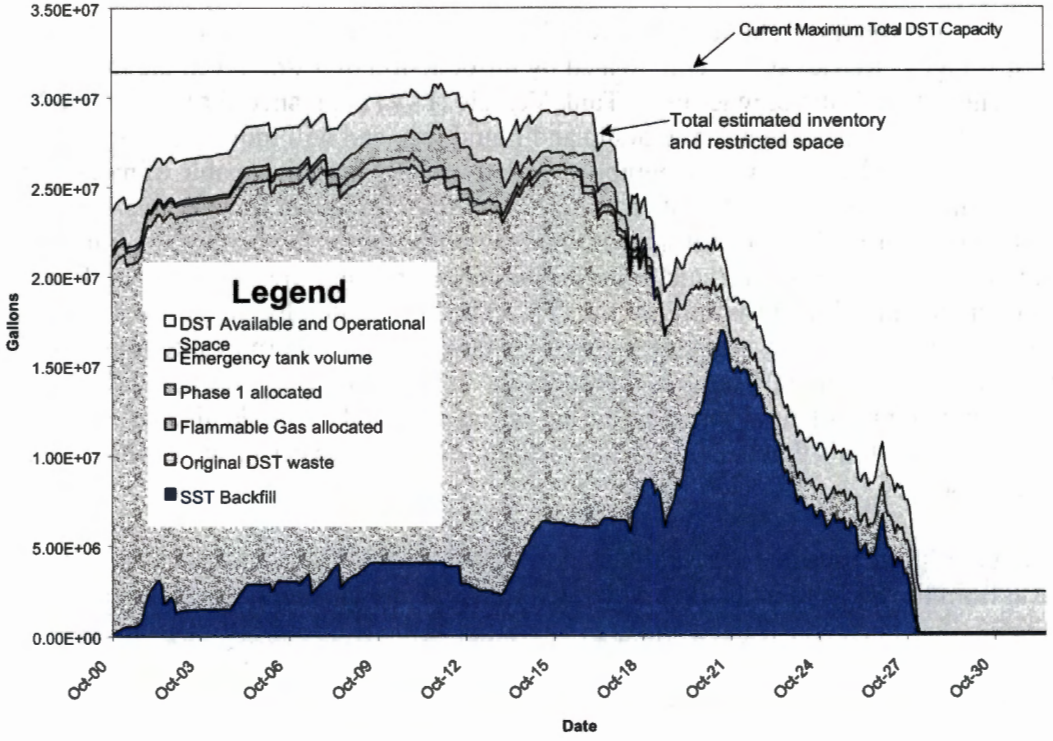
Figure 6 below represents our current best analysis for available DST space through the mission, without consideration of the proposed acceleration initiatives (RPP-8554, Rev 0). The top shaded area indicates available DST space. The plot indicates that the total available DST space is nearly used during years 2009 to 2012, allowing limited SST retrievals into the DST system during this period. There are two potential solutions to this problem, which will enable further SST retrievals as well as meet the goals outlined below for the accelerated closure Key Element 3. These are:

- Modify the existing SST retrieval sequence for earlier retrieval of low volume tanks, allowing subsequent closure actions[2], and

- Implement DST space utilization options.

[2] This would not meet Ecology's priority of focusing on risk reduction and "worst first"

Figure 6. Available Double-Shell Tank Space



This figure is Case 2, from the Single-Shell Waste Tank Retrieval Sequence and Double Shell Tank Space Evaluation RPP-8554, Revision 0, September 2001.

The existing SST retrieval sequence is based largely on retrieving highest risk SSTs first. The highest risk tanks generally contain the largest volume of waste. This retrieval strategy limits the number of tanks that can be retrieved into the DST system and subsequently closed. By modifying the retrieval sequence to retrieve multiple lower volume tanks in conjunction with the higher volume/higher risk tanks, more SSTs can be emptied and subsequently closed for overall progress towards the target of having all tanks closed by 2033.

Options for gaining additional space in the DST system have been evaluated and defined in RPP-7702, Rev 0. Table 2 below identifies seven opportunities with the highest potential for implementation. As part of this strategic initiative, these options will be reviewed and implementation plans will be developed. By the end of 2005, as much as 3 million gallons of additional space will be made available through these initiatives. In addition, this provides additional contingency waste feed in the DST system to feed the enhanced WTP and supplemental treatment technologies.

Table 2. Seven Tank Space Utilization Options

Option	Potential Capacity Gained (Kgal)	Time to Implement (years)
Raise Allowable DST Waste Levels	1,400	1
Decrease Dedicated Operational Space	850	0.3
Use Restricted Tank Capacity	1,300	2
Combine Aging Waste	980	8
Utilize Alternative Storage for Emergency Reserves	2,300	4
Concentrate Waste to a Higher Specific Gravity	2,200	6
Use Double-Contained Surface Storage	1,000	7

The combination of the above actions provides confidence and a planning base for acceleration of retrieval of waste from the DSTs and SSTs. The development of a target baseline will identify the accelerated installation of retrieval/transfer systems to support the more robust WTP and supplemental treatment options. Completing the planned SST retrieval demonstrations removes waste from the next three SSTs and begins to prepare these tanks for closure. In addition, these demonstrations will provide better understanding of the capabilities and limits of the technologies. Identifying and implementing a revised SST retrieval sequence and implementing DST space initiatives enables further acceleration of the SST retrieval and closure program targeting the overall closure of tanks by 2033.

Key Element 2 – Complete Tank Waste Treatment by 2028

Completing the treatment[3] of Hanford tank wastes by 2028 is an immense and complicated task. The large volume and diversity of wastes requires us to seek new ways to complete the treatment task by 2028. The C3T has provided a forum for evaluating the problem and identifying potential solutions to overcome the obstacles to completing treatment. The C3T's efforts have been enhanced by improved insights brought forward by the WTP contractor, the tank farm contractor, and others who have focused on mission acceleration issues over the past several months. A basic assumption underlying both the previous and the current waste treatment approaches is that although HLW is dispersed throughout most of the Hanford tanks, the majority of the wastes are chemical in nature, much of which was placed in the tanks to neutralize acids used in reprocessing in order to minimize tank corrosion. The HLW constituents

[3] The current TPA requirement is for vitrification of all tank waste by 2028.

can be separated from the chemical constituents via a combination of liquid/solid separations, i.e.; filtration/ion exchange processes. WTP separations processes have been designed such that the high-volume, primarily chemical waste fraction will meet the "waste incidental to reprocessing" (WIR) criteria set forth in DOE M 435.1-1 (DOE's process to determine whether those wastes may be managed as low-activity waste or LAW). DOE and Ecology approval will be necessary in determining the proper treatment, stabilization, and disposal techniques to ensure that a sustainable, quality cleanup is attained.

Potential acceleration approaches that have been identified have been grouped in the following manner to facilitate discussions: (a) HLW treatment in the WTP, (b) LAW treatment in the WTP, and (c) LAW treatment external to the WTP. The Tank Farm Contractor is responsible for non-WTP supplemental technology demonstrations and will draw upon commercial vendors for the required expertise. The accelerated technical approach is discussed in the sections that follow. Table 3 summarizes key assumptions in each area and compares the assumptions underlying the originally planned post-privatization plant set forth in the WTP Contract and the plant envisioned under this acceleration initiative.

(a) HLW Treatment in the WTP

The WTP contract is based on a HLW vitrification output of 120 HLW canisters per year achieved by a 1.5 metric ton of glass per day (MTG/D) HLW melter. Each HLW canister will contain approximately 3.1 MTG. Under the WTP Contract Case one canister would be filled every 2-plus days. Under the HPMP Acceleration Case nearly two canisters per day would be filled. It is assumed that between 9,000 and 12,500 HLW canisters will be filled over the lifecycle of waste treatment[4]. The number of canisters actually produced is a function of several factors including (a) the actual volume of insoluble sludges contained in the tanks, (b) the effectiveness of sludge washing processes to separate high sodium (Na) salts from high actinide sludge constituents, (c) the chromium (Cr) and other metal concentrations in the wastes (certain metals limit waste solubility in glass). Figure 7 contrasts the WTP Contract Planning Case with the HPMP Acceleration Case for HLW treatment.

[4] Various analyses have indicated that fewer than 9000 HLW canisters and greater than 16,000 HLW canisters could be produced, the higher numbers being strongly influenced by the effects of Cr on waste loading assuming a single phase glass must be produced.

Table 3. Comparison Between WTP Contract Planning Case and HPMP Acceleration Approach

Metric	TPA Requirement	WTP Contract Planning Case	HPMP Acceleration	Change from WTP Contract Planning Case
Hot Commissioning Completed (both HLW and LAW)	2011	2011	2010[5]	1 Year Acceleration
Attain Total Required HLW and LAW Treatment Capacity Sooner	NA	Full Capacity in 2018	Full Capacity by 2010	8 Year Acceleration
Improve Initial HLW Treatment Capacity	NA	Start with 1 HLW melter producing 120 canisters/yr	Start with 2 HLW melters that together produce 480 canisters/yr	4X capacity increase at hot commissioning
Improve Initial LAW Treatment Capacity	NA	3 melters totaling 1100 Na units/yr.	Combination of (a) LAW melters and supplemental WTP LAW immobilization techniques to provide 2200 Na units/yr, and (b) supplemental non-WTP treatment at 750 Na units/yr, for a total LAW treatment rate of 2950 Na units/yr*	2.7X capacity increase at hot commissioning
Complete Treatment of 10% of Waste Mass Containing 25% of Radioactivity (both HLW and LAW)	2018	2018	2014	4 Year Acceleration
Complete Waste Treatment (both HLW and LAW)	2028	2041[6]-2048	2028	20 Year Acceleration

* Assumes potential supplemental technologies are successful.

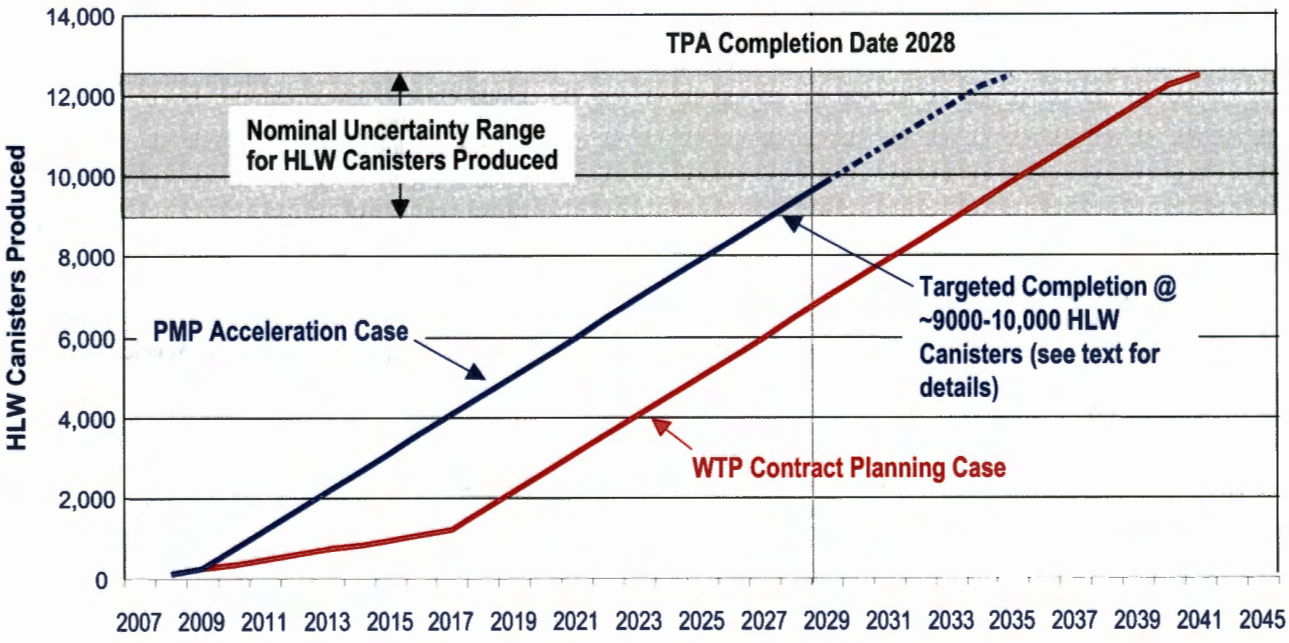
[5] The WTP Contract date is 2011, however, contract performance incentives provide for accelerating the date to 2010.

[6] This date is uncertain. The date is dependent on whether additional LAW capacity is added. The date could also be extended by several years for HLW treatment, as the original design provisions did not address Cr removal and other steps considered in the PMP accelerated approach. Ignoring those factors could substantially increase the number of HLW canisters required and extend the completion date.

The HPMP accelerated approach to HLW treatment illustrated in Figure 7 is based on assumptions that we will[7]:

1. Deploy advanced HLW melter designs in the initial WTP to increase the throughput obtained from a single melter from 120 HLW canisters/year (1.5 MTG/D) to 240 canisters/year (3 MTG/D),
2. Increase from one to two HLW melters which quadruples the initially planned HLW throughput capacity,
3. Deploy sludge washing techniques including Cr oxidation to both reduce the volume of sludges sent to the HLW melters and also reduce Cr impacts on waste loading in glass,
4. Deploy a multiphase glass form acceptable for repository disposal to increase HLW loading in the glass,
5. Deploy improved technologies as melters are replaced to obtain higher loadings/greater throughputs,
6. Treat TRU materials[8,9] external to the WTP for disposal at WIPP, and
7. Leverage the existing safe configuration of Hanford's sealed Cs/Sr capsules to provide a permanent isolation pathway that does not require vitrification, thereby avoiding the risks associated with opening the capsules (discussed under Strategic Initiative 3).

Figure 7. Comparison of WTP Contract and HPMP Acceleration Cases for Treating HLW in the WTP



[7] ORP is evaluating additional accelerated treatment concepts such as waste blending. Waste blending offers the promise of providing a near uniform melter feed by homogenizing chemical spikes and allowing the melters to avoid feed transients that could reduce waste loading or otherwise decrease operational efficiencies.

[8] Approximately 9 SSTs and 3 DSTs appear to contain wastes that are transuranic, did not originate from fuel reprocessing, and consequently are not within the Atomic Energy Act definition of HLW. DOE will make a determination on the proper classification of those wastes based upon the historical records and other information relative to the origin and content of those wastes.

Increasing each HLW melter capacity to 240 canisters/year within the currently planned facility footprint appears to be achievable due to improvements made in the melter design such as bubblers that improve mixing rates. Assumptions 3 through 7 in the above list contribute to driving the number of HLW canisters produced towards the goal of 9000 canisters. In addition, DOE is keeping abreast of commercial enhanced radionuclide separations technologies that may offer a future potential to reduce the mass of inert sludge materials vitrified as HLW, thereby further reducing the number of HLW canisters produced. All HLW[10] will be vitrified and packaged for disposal at the national repository[11].

(b) LAW Treatment in the WTP

The WTP Contract Planning Case for LAW is based on attaining a LAW vitrification rate of 1100 Na units/year at the completion of hot commissioning in 2011 and the assumption that additional vitrification capacity would be added by 2018 to reach a total rate of 2200 Na units/year. The WTP contract calls for an initially installed pretreatment plant capacity that is sized to accommodate the 2200 Na unit/yr LAW treatment rate associated with the 2018 plant expansion. Having the additional pretreatment capacity available at the outset of operations opens the door for bringing additional LAW immobilization capacity online at the start of treatment operations rather than in 2018. This is the approach taken in our HPMP accelerated treatment plan. Figure 8 contrasts the WTP Contract Planning and HPMP Acceleration cases for treatment of LAW in the WTP.

Our key assumptions in developing the HPMP Acceleration Case for LAW treatment in the WTP as shown in Figure 8 are as follows.

1. Hot commissioning can be completed one year earlier (2010) than specified in the WTP contract. This is consistent with performance incentives in that contract that reward the contractor for achieving an earlier hot commissioning completion date.

2. The initial capacity at hot commissioning in 2010 can be increased to 2200 Na units/year, thereby eliminating the 2018 "knee" in the Figure 8 WTP Contract Planning Case curve.

3. Additional WTP LAW treatment and immobilization capacity can be achieved using a non-vitrification technology[12] provided the final waste form meets applicable Hanford

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[9] Alternative TRU treatment has not been evaluated by the C3T.

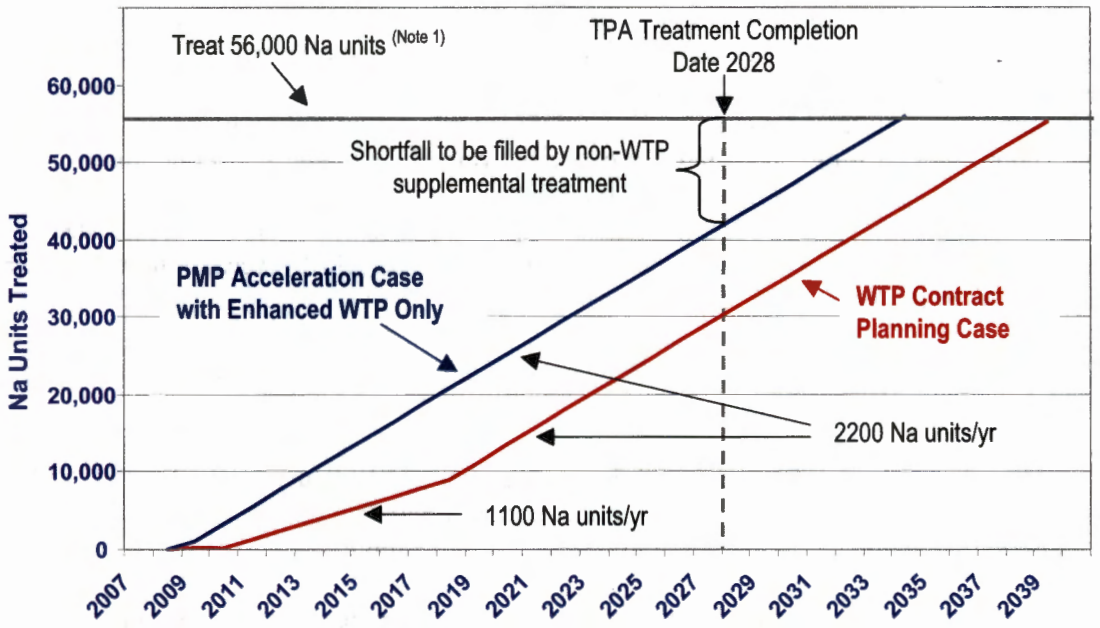
[10] As noted, the Cs/Sr capsules are not planned for vitrification at this time as alternative pathways are being developed to provide equivalent health and environmental protection at reduced risk to workers and life cycle cost. If alternative pathways leading to the permanent isolation of those capsules are subsequently determined not to be viable within the time frames of interest, the vitrification alternative will still be available.

[11] ORP is seeking to accelerate its shipping schedule to the repository to begin shipments between 2012 and 2015, depending on repository availability, in order to accelerate waste movement offsite and final disposal in the repository. This will also reduce life cycle cost by approximately $1 billion by reducing the size of new canister storage facilities to be built onsite.

[12] Providing the additional treatment capacity using the LAW vitrification technology deployed in the LAW treatment plant is not a viable option due to (a) insufficient time to design, build, and deploy an additional 30 MTG/D vitrification unit within the time frames required, and (b) the fact that many tanks contain wastes that are less well suited for vitrification, i.e., tanks with high sulfate concentrations which negatively affect glass production.

Site performance requirements for the disposal of radioactive materials and the requirements of Washington's Dangerous Waste Regulations. For example, steam reforming[13] potentially provides a parallel treatment path to vitrification for LAW that contains high sulfate concentrations, which are detrimental to vitrification. The WTP contractor is currently planning tank waste tests using a fluidized-bed steam reforming process. Earlier tests commissioned by the WTP contractor on surrogate Hanford tank wastes suggested that steam reforming could be successfully used to treat high sulfate LAW. This is important because sulfates in the waste greatly inhibit waste loading in glass.

Figure 8. Comparison of WTP Contract and HPMP Acceleration Cases for Treating LAW in the WTP

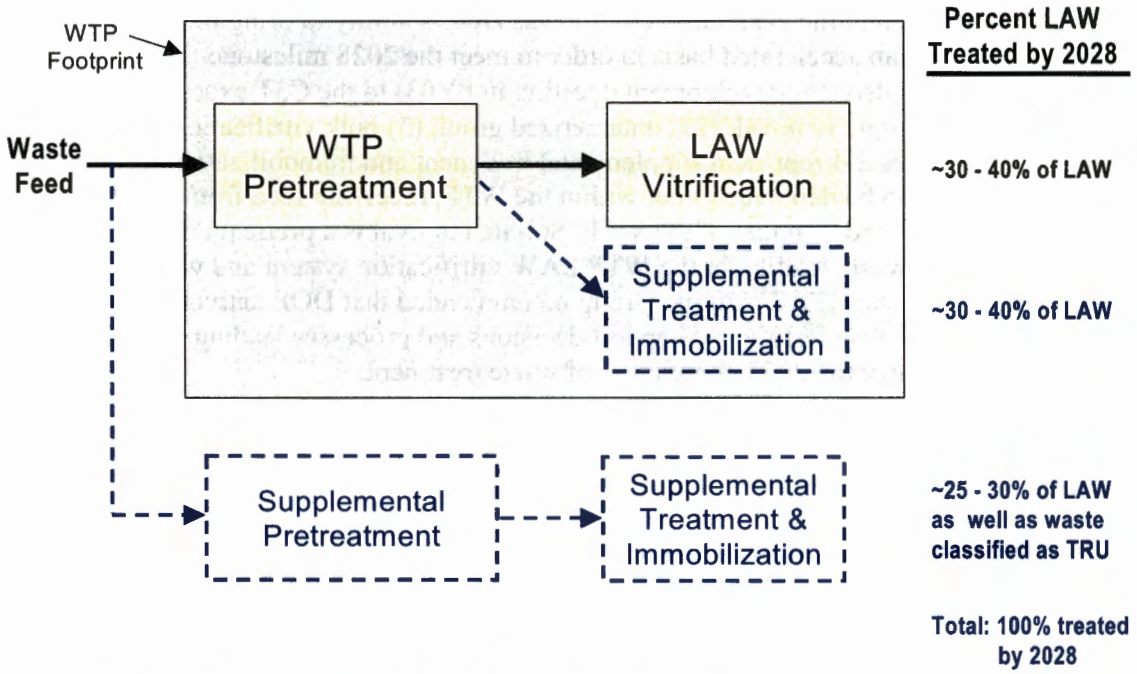


Note 1. The 56,000 units are based on 48,000 metric tons of Na retrieved from the tanks and 8,000 metric tons of Na added during certain pretreatment operations. It does not include some Na sources that, by contract, must be accommodated in the net processing rate by the treatment system, e.g., caustic used to neutralize certain wastes.

As illustrated in Figure 8, DOE projects that even with the assumption that additional LAW treatment and immobilization capacity can be brought online by 2010 to achieve 2200 Na units/year net LAW immobilization throughput, the TPA milestone for completing waste treatment by 2028 cannot be met. Because the WTP will be at its design capacity for the major facility footprints, the C3T opened the planning horizon to consider supplemental LAW treatment alternatives that could be effectively deployed outside the WTP. This concept is illustrated in Figure 9 and discussed in section (c) below.

[13] See (c) below for further information on steam reforming.

Figure 9. HPMP Accelerated Case: Deployment of Supplemental LAW Treatment to Complete Treatment by 2028



(c) Supplemental LAW Treatment External to the WTP

Whereas vitrification is a robust LAW treatment approach, it is not equally well suited for all Hanford LAW. A total WTP-based vitrification approach for LAW does not appear to be the best path forward for several reasons beyond those noted in (b) above. For example, as a pioneer site for spent fuel reprocessing, during its first two decades of operations Hanford deployed numerous chemical processes and reprocessing approaches as the science evolved. The Hanford laboratories and operations facilities created a spectrum of chemical compounds that are not found at other DOE weapons sites. Information in DOE's Hanford Best Basis Inventory in the TWINS database shows very large tank-to-tank chemical compound and radionuclide speciation and concentration differences. Major differences even exist between the stratified phases within individual tanks. Some of these tank wastes have characteristics that are less well suited for the WTP Contract Planning approach than others. The strict application of that approach to all waste streams regardless of the radioactive and chemical constituents present in each stream has the potential to unnecessarily constrain the rates of treatment/immobilization. Accordingly, a C3T team was established to evaluate the potential for using other treatment technologies to supplement the WTP LAW vitrification capacity.

The C3T came to the conclusion that the timely deployment of supplementary treatment technologies offers the potential to significantly increase waste treatment rates, thereby making it possible to meet or beat the TPA 2028 treatment completion date. Since the release of the May

1st HPMP, the C3T ORP Baseline Opportunities Team (C3TBOT)[14] charged with this element of the plan reviewed dozens of technologies and approaches and evaluated the leading candidates using criteria developed by the team that considered key areas related to process safety, regulatory compliance and permitting, operability, technical risks, and programmatic risks. One pervasive sub-theme within the evaluation criteria was DOE's ability to bring the supplemental technologies online on an accelerated basis in order to meet the 2028 milestone. The technologies recommended (for developmental testing in FY03) to the C3T executive group by the C3TBOT are (1) sulfate removal, (2) containerized grout, (3) bulk vitrification, and (4) steam reforming. Technologies 2-4 represent supplemental treatment and immobilization techniques and have the potential to be deployed either within the WTP, receiving feed from the WTP pretreatment facility, or independent of the WTP. Sulfate removal is a pretreatment process focused on increasing waste loading in the WTP LAW vitrification system and would be deployed in the WTP. The C3T Executive Group recommended that DOE actively pursue the actions required to complete testing and support decisions and processes leading to deployment of technologies to achieve the 2028 completion of waste treatment.

Our plan entails selectively deploying supplemental technologies in a manner that is aligned to the specific constituents in the waste. Each of the technologies is briefly discussed below.

- **Sulfate Removal** – This supplemental process differs from the following three potential technologies as it is not intended to provide a supplemental LAW waste form but, rather, to increase waste solubility in the WTP LAW vitrified waste form. As previously mentioned, sulfates in the tank wastes can severely limit the solubility of LAW in glass. DOE's lifecycle LAW disposal projections assumed that the sulfate issue would be resolved but the resolution was not included in the WTP design due to the relatively low waste mass originally anticipated to be treated during "Phase 1". The HPMP acceleration initiatives bring the sulfate issues to the forefront. The technologies discussed below are each individually less susceptible to sulfate issues than WTP vitrification. This supplemental technology is therefore focused on wastes that will be treated via the WTP vitrification system. The key process steps are as follows. First, the waste stream is reacted with nitric acid to change the stream from alkaline to acidic. Strontium nitrate is then added to precipitate sulfates. The relatively small volumes of precipitated sulfates are then separated from the liquid phase. The liquid phase is then vitrified as LAW in the WTP and the precipitated sulfate solids are immobilized in a grout matrix for on-site disposal as a secondary mixed waste. Use of sulfate removal would result in a net reduction in immobilized LAW volume produced (including the secondary waste) relative to the WTP Contract Planning Case.

- **Containerized Grout** – The grout concept envisioned by the C3TBOT differed from the earlier Hanford grout vault concept in that (a) the grout would be containerized thereby

[14] The C3T ORP Baseline Opportunities Team is responsible for this initiative area. The input considered by the team and the results of that team's evaluations are provided in a series of documents as follows: RPP-11131, 2002, Mission Acceleration Initiative Demonstration Information Package, Rev. 0, CH2M HILL Hanford Group, Inc., Richland, Washington; RPP-11305, 2002, Three-Day Workshop to Evaluate Alternative Treatment Options for Hanford Site Tank Waste, Meeting Minutes, Rev. 0, CH2M HILL Hanford Group, Inc., Richland, Washington; RPP-11306, 2002, Evaluation of Low-Activity Waste Feed Supplemental Treatment Options by the C3T Mission Acceleration Initiative Team for the Office of River Protection, Rev 0, CH2M HILL Hanford Group, Inc., Richland, Washington; C3T ORP Baseline Opportunities Team Report, June 2002.

facilitating retrieval if retrieval were ever deemed necessary, (b) pretreatment would be provided as required to reduce Cs-137 and Tc-99 concentrations to levels appropriate for a grout-based matrix, and (c) more competent grout formulations would be custom-tailored to the specific characteristics of the tank waste to be immobilized and to Hanford's soil conditions. Grouts are successfully used throughout the world to immobilize radioactive and hazardous wastes due to their flexibility and ability to be deployed in combination with other treatment approaches (e.g., with steam reforming) to tailor the waste form. Grouts may offer suitable supplemental LAW waste forms for wastes that have already undergone or do not require thermal treatment, e.g.; to treat organic materials. Whereas the grout process offers operational safety and permitting advantages over alternatives that operate at elevated temperatures (e.g., vitrification, steam reforming), the Hanford grout vault experiment has elevated the level of regulatory and stakeholder scrutiny that grout will receive in a Hanford tank waste deployment situation for the more soluble waste constituents[15]. The waste would be processed by an ambient solidification step wherein the waste would be well mixed with grout formers such as Portland cement, fly ash, slag, and other getters/conditioners as required to meet Washington Dangerous Waste Treatment Standards and Hanford Site radioactive material disposal requirements. The grout would then be placed into containers for disposal. Use of grout as a supplemental technology is projected to increase the total immobilized LAW volume produced. Grout formulations best suited for the immobilization of sulfate rich saltcake tank wastes will be developed for testing as an initial step to confirm that an environmentally sound and fully compliant path forward exists.

- **Bulk Vitrification** – Bulk vitrification is a flexible technology that was initially developed via DOE science and technology funding. It is now used domestically and internationally for radioactive, hazardous, and mixed waste treatment. Bulk vitrification differs from the WTP vitrification approach in several important ways. First, bulk vitrification can be carried out in very large containers[16] with 20-30 m^3 capacities resulting in waste forms with less surface area available to precipitation that may infiltrate the disposal sites over time. Second, the melter is also the container and therefore disposed of after each use. Third, higher waste loadings may be achievable compared with other approaches because (a) the higher temperatures required to form aluminosilicate glass[17] also increase waste loading, and (b) the waste remains in the melter and does not need to be formulated to meet pouring and container filling viscosity requirements. Bulk vitrification offers potential for some of the LAW requiring treatment, e.g.; SST saltcake. Regulators on the C3TBOT indicated that bulk vitrification would need to be deployed in a structure that provides secondary containment and off-gas treatment capabilities consistent with the waste being treated (e.g. meeting state and federal air requirements). Use of bulk vitrification as a supplemental treatment method is projected to reduce the volume of immobilized LAW produced relative to the WTP Contract Planning Case.

[15] The soluble constituents include, but may not be limited to, Cs-137, Tc-99, and nitrates/nitrites.
[16] Or *in-situ*, e.g., for irretrievable waste materials in soil.
[17] The same glass formulation used in the WTP LAW melters (borosilicate glass) could be deployed, however, readily available high silica sands are envisioned to be used due to the durability of the resultant waste form and the lower material costs.

- **Steam Reforming** – Steam reforming is a candidate for deployment within the WTP footprint (to supplement vitrification) and also has the potential to be deployed external to the WTP. Steam reforming is a well-established petrochemical-processing technology that has also been effectively used over the past several years to treat radioactive wastes from commercial nuclear power plants. The process under evaluation has the capability to destroy organics, convert alkali and other metals to stable minerals, gasify carbon, and reduce nitrates and nitrites to nitrogen gas. Its apparent ability to treat high sulfate wastes is particularly desirable. The steam reforming process is as follows. The waste is processed in a high-temperature fluidized bed under a slight vacuum. Superheated steam and additives are injected into the bed creating both reducing and oxidizing zones. The process destroys nitrates and, with the help of additives, incorporates radioisotopes together with sodium, sulfate, chlorine, and fluorine into a mineral-like waste form. The C3TBOT's review indicated that, with appropriate additives, a sodium aluminosilicate mineral-like waste form could be created to provide a potentially suitable supplement to LAW glass. Steam reforming results in a granular waste form that may need to be combined with a binder to form a monolith or encased within a high integrity container for disposal. The process will undergo testing with actual Hanford tank wastes to ascertain that the process meets Washington State's Dangerous Waste Treatment Standards for hazardous constituents and that the waste form created has performance characteristics consistent with those required for disposal of LAW at Hanford. Use of steam reforming as a supplemental technology may result in a small increase in immobilized LAW volume.

Our intent is to conduct the prerequisite testing and analyses to bring an appropriate combination of the above technologies to deployment to supplement LAW treatment and immobilization in the WTP to achieve the completion of tank waste treatment by 2028. The four technologies, although all mature in other applications, require differing levels of testing, particularly with Hanford tank wastes, to develop data necessary to make final deployment selections and to underpin analyses required for NEPA, regulatory, and internal DOE processes. While the four technologies are leading candidates, the agencies will consider additional approaches that can be shown to meet regulatory, performance, and schedule requirements.

Depending on the success of developmental testing, one to two supplemental technologies may be deployed external to the WTP, each providing approximately 50% of the treatment capacity (~750 Na units/year) necessary to meet 2028 when combined with the treatment provided by the enhanced WTP LAW system. The first 50% of the capacity is assumed to be available in 2008 and the remaining 50% in 2010. The net effect of the enhanced WTP LAW treatment capacity as described in (b) and the non-WTP LAW supplemental treatment described in (c) is portrayed in Figure 10.

Demonstration activities will include retrieval in accordance with the TPA[18], isolation of tank equipment, and may include treatment and/or stabilization of residuals, and possible filling of tank void space and installation of interim surface barrier. Residuals are defined as waste left in the tank after retrieval as defined by regulatory and TPA requirements.

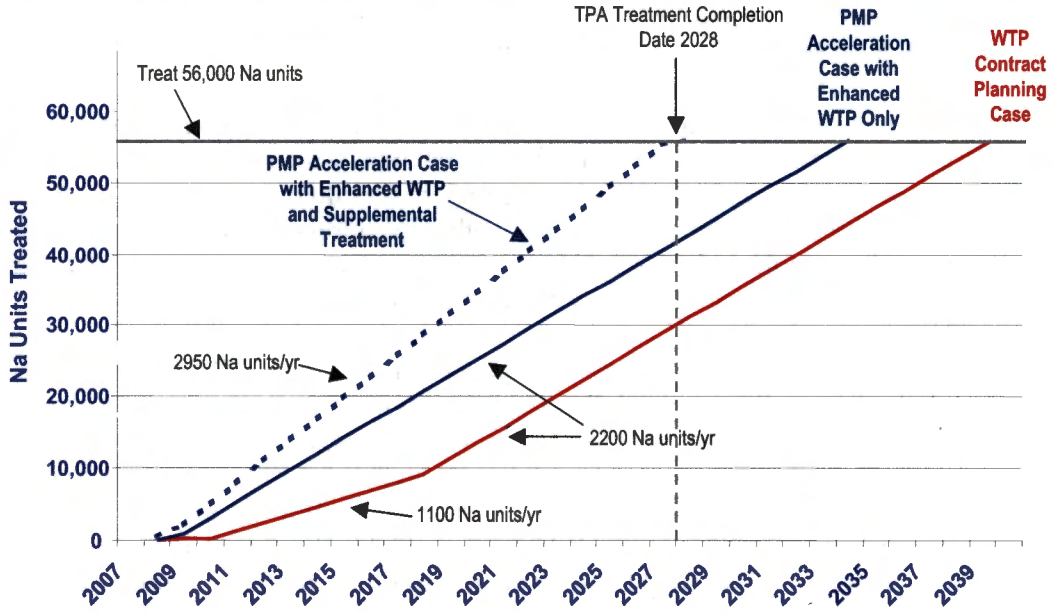
The remediation of ancillary equipment and soils is not presently part of the tank closure demonstrations. We anticipate ancillary equipment and contaminated soils will be addressed as part of tank farm and waste management area closures under Hazardous Waste Management Act (HWMA). The ARCD Team will continue to work together to address the issues surrounding ancillary equipment and contaminated soils, and will schedule activities necessary to obtain the information required for the closure and mission completion EIS.

Significant progress has been made developing the regulatory path forward. Recognizing that one of the principal objectives of the parties' demonstrations will be the collection of new information that will support making retrieval and closure decisions, the ARCD Team has reached agreement that demonstration activities will be conducted under the hazardous waste facility permitting process administered by Ecology, pursuant to the HWMA and its implementing regulations. This will ensure public awareness and participation in decision-making as the site-wide permit is modified to allow demonstration activities. A Framework SST System Closure Plan (Framework) will be developed that includes a compliance schedule and key definitions, and that incorporates as many elements of a final closure plan for the Hanford tanks as are known at that time. Sections of the Closure Work Plan Update, submitted for Ecology review on June 30, 2002, will be incorporated into the Framework. Additional information obtained through data acquisition activities and closure lessons learned will also be used to update the Framework. Single tanks or groups of tanks will be addressed via individual retrieval and closure demonstration plan (or plans) developed and submitted in parallel to the Framework. Agreement has been reached that, as appropriate, tanks may be grouped within a single plan, even if they are not in the same Waste Management Area. Ecology, ORP, and cognizant RPP contractors will jointly develop specific requirements for the Framework and individual/group tank demonstration plans. Agreements have been reached that the Framework and individual plan(s) will be submitted as modifications to the site-wide permit. Ecology is evaluating a permit modification process that supports initial retrieval and closure demonstrations while also allowing adequate time for permit development and public review and comment.

The projected path forward is as follows. In July 2002, tank selections will occur for SSTs to be included in the demonstration initiative. The associated TPA change request will be finalized in August 2002. In November 2002, ORP will submit the Framework SST System Closure Plan and tank-specific demonstration closure plans for public comment. Preparatory work necessary to support future retrieval activities in the demonstration tanks is scheduled to start in December 2002. Following appropriate retrieval actions, DOE will submit the results, residuals analyses, and (if necessary and appropriate), a request for exception to criteria pursuant to TPA Appendix H. Tank-specific closure plans require Ecology approval and DOE O 435.1 requirements must

[18] The TPA requires a three-tier process. The first step is to retrieve as much waste as technically possible from each tank. The second step would be to compare the results of that effort against the 99% criterion. In the third step, DOE has the opportunity to request an alternate endpoint using the Appendix H process.

Figure 10. Comparison of WTP Contract and HPMP Acceleration Cases for Treating LAW Including Supplemental Non-WTP Treatment



Key Element 3 – Accelerate Tank Closure

The third key element is focused on starting the SST closure process now, ten years earlier than current TPA commitments (2012) and also accelerating the retrieval program currently underway. There is a recognized need to link planned retrieval actions with closure actions. The C3T Accelerated Retrieval and Closure Demonstration (ARCD) Team has been working to define initial SST waste retrieval and closure demonstrations enabling the parties to begin SST retrieval and closure in a manner supporting the acceleration of Hanford Site cleanup. The DOE has established a goal to demonstrate retrieval and closure of five tanks by 2004 (no agreement has been reached with Ecology regarding this DOE goal). The ARCD Team has agreed on key regulatory and TPA processes to enable the early closure of tanks.

The ARCD Team has agreed that SST waste retrieval and closure demonstrations will be undertaken at an initial set of four SSTs: one SST with a low-volume of waste to demonstrate retrieval and closure processes and three SSTs containing higher-waste volume and waste posing high risk to demonstrate full scale retrieval and closure acceleration. Based on a set of tank selection criteria (including risk reduction, chance for success, ease of implementation, data availability, potential programmatic impacts, and potential cost and schedule to implement), the ARCD recommended that tanks for closure demonstrations should be selected from the AX, C, and S Tank Farms (with the possible exception that tank U-107 may be considered).

be met. Current TPA milestones require initiating closure demonstration for a tank farm in FY 2012 and completion of activities in FY 2014. The careful integration of technical activities with regulatory processes, coupled with accelerated approvals and guidance from Ecology and DOE, could accelerate the completion of the first tank closure demonstration to 2004.

Objective and Approach -Accelerating tank farm closures provides a means of eliminating risks associated with maintaining waste in aging SSTs (e.g., increased worker and groundwater infiltration-related risks). DOE has established a target range of closing 60 to 140 SSTs by 2018. For example, closing 140 tanks would support accelerating mission completion to 2025. The ability to meet the more aggressive closure targets is dependent upon successfully achieving accelerated waste treatment rates (as indicated in Figure 7 and Figure 10), successfully deploying DST strategies to more effectively utilize DST space, and optimum utilization of infrastructure and occupancy limits in the tank farms; together, these approaches should result in freeing up the DST space required to support accelerated SST retrieval and closure goals.

Risks associated with tank wastes remaining in tanks following completion of retrieval activities (i.e., approved residuals) will be evaluated on a risk-basis to help determine stabilization, in-tank engineered barriers, and surface barrier requirements as required under DOE Orders and the HWMA. Activities will focus on utilization of retrieval and closure methodologies that are compliant with applicable regulations. The ARCD logic is consistent with the current tank closure-planning basis under both DOE Order 435.1 and RCRA (Washington State's Hazardous Waste Management Act implements RCRA). Critical elements of the approach envisioned to support tank closure include:

- Understanding the limits of retrieval technology to remove waste from SSTs.
- Understanding the long-term risk from residuals that may remain in the tank after retrieval and in the area surrounding the tanks (e.g., soils and ancillary equipment) following closure.
- Understanding of the engineered systems (i.e., tanks, ancillary equipment) as they currently exist.
- Implementing proven and cost-effective engineered closure systems that will minimize the potential for releases (e.g., stabilization, encapsulation) and limit access (e.g., institutional controls, barriers) to the tank(s) once closure actions are completed.

DOE's waste retrieval and closure demonstrations must have a sound basis that includes engineering, regulatory (including risk management), and management aspects. The approach is to work in a systematic and manageable manner by demonstrating waste retrieval and closure of an individual SST and progressing toward tank farm closure. By approaching tank closure as demonstration activities, the actions taken during the demonstration project are intended to establish and demonstrate the technical and administrative aspects of retrieval and closure to be used for future actions. This approach is focused on providing high-value results that focus on

the development of a closure plan using solutions that are feasible, while meeting regulatory requirements and protecting human health and the environment.

The ARCD Team envisions that questions regarding required extent of retrieval and acceptable residuals will be defined by a combination of the following three actions: 1) regulatory and associated TPA requirements (such as Closure Plans and M45 milestones), 2) issues regarding the DOE O 435.1 process, and 3) the development and processing of a SST System Closure Environmental Impact Statement (EIS) under NEPA/SEPA.

Technical Basis -- The SST retrieval and closure logic includes development of a sound technical baseline, project execution of the technical and regulatory requirements associated with waste retrieval and closure, and validation of closure effectiveness needed to finalize closure and use the lessons learned from demonstration closure actions to enhance final closure actions.

DOE will prepare a Data Assessment Report that compiles and assesses existing technical data, including prior closure engineering studies, and available tank waste and contaminated soil characterization data. Elements of the tank farm closure system that will be addressed include potential materials for residual waste stabilization and tank fill, the remediation of ancillary tank farm equipment and contaminated soil, and surface barriers. Results of prior engineering studies that evaluated and compared alternatives for each of these elements will be summarized. Requirements, performance measures, and approaches for evaluating and comparing alternatives will be identified. An Alternatives Generation and Analysis (AGA) will be conducted to identify the preferred alternative for closing the initial SSTs for the ARCD. The AGA will incorporate trade studies on worker risk, cost, and long-term human health and environment risks to support selection of closure technologies.

The analysis to be prepared to support the ARCD will be consistent with the requirements of DOE O 435.1 (performance and composite assessments) and with risk assessments used to support remedial action decisions under CERCLA and closure requirements under the HWMA (RCRA).

The information used during development of the retrieval and closure demonstration project plans (i.e., identification of regulatory and technical requirements, technology screening, risk assessment with uncertainty based closure performance criteria) will be used for the following purposes:

- Make final selection of the sequencing of closure demonstrations
- Initiate development of demonstration project-specific functions and requirements
- Initiate the tank- or tank farm-specific risk assessment required to support regulatory decisions under DOE O 435.1, closure requirements under the HWMA and NEPA.

Regulatory Factors – DOE must comply with the TPA, NEPA, DOE Order 435.1, RCRA, 40 CFR 191, CAA, and HWMA. Each of these processes has a purpose to demonstrate that the closure action will result in an end state that is protective of human health and the environment. Each has challenges and uncertainties that will be addressed during the ARCD. DOE is working

closely with Ecology, Health, EPA, and HQ staff to map out a mutually agreeable and viable path forward. Whereas the preliminary demonstrations may fall within existing NEPA/SEPA coverage, progressing beyond the demonstrations will require additional NEPA/SEPA documentation. DOE has been working with Ecology on a day-to-day basis to further define the decision process and will continue to do so in moving forward.

Key Assumptions -- Key assumptions that the ARCD approach is founded upon are as follows:

- Ecology approval for this demonstration is prerequisite to continued progress. DOE will seek Ecology approval via its submittal of retrieval and closure demonstration closure plans, Ecology has indicated it will accelerate its review cycle and approval process.

- DOE approval of demonstrations is required and will be obtained via the Waste Incidental to Reprocessing (WIR) determination process in accordance with DOE O 435.1.

- Tanks have not been selected for the ARCD but negotiations with regulators are underway to identify retrieval and closure demonstration tanks (selection by late July 2002). These demonstrations are in addition to existing TPA milestones.

- NEPA and State Environmental Policy Act (SEPA) (RCW 43.21c) coverage for the ARCD through 2004 will be provided through appropriate NEPA/SEPA analysis.

Overall Rationale for Strategic Initiative 2

The rate of tank waste treatment affects (a) the overall rate of risk reduction and the time required to complete the RPP mission, (b) the requirements placed on the retrieval and feed delivery systems that support treatment, and (c) the rate that tank closures can take place in that waste treatment creates DST space to receive retrieved wastes. Strategic Initiative 2 and its suite of three key elements provide a comprehensive approach to completing tank farm cleanup sooner and also enables overall Hanford Site remediation to be concluded sooner consistent with the other initiatives described in this HPMP.

Through this strategic initiative and acting in concert with the C3T agency executive management, we are developing a comprehensive solution that will protect human health and the environment by achieving real near-term progress, accelerating risk reduction, and completing the cleanup of Hanford tank waste decades earlier than would otherwise occur.

Approach

Our implementation approach requires that we focus and incentivize the WTP contractor and the tank farm contractor to drive the project to accelerated rates of risk reduction and work completion. We will therefore enhance our existing contracts to implement the HPMP and assure that we complete tank waste treatment by 2028 and conclude tank closure activities by 2033. Where appropriate, contract dates will be modified to reflect the HPMP acceleration dates. Contract enhancements will include strong performance incentives that will drive accelerated risk reduction, achieve a quality cleanup on or before the schedules set forth, reduce risks to our

workers, and maximize the human health and environmental benefits received for the investments made.

4.1.3 STRATEGIC INITIATIVE 3 - ACCELERATE 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, consolidated storage and eventual shipment of these materials, we will quickly reduce 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. Stranded 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 (CSB) on the Central Plateau for safe long-term storage until it can be shipped to a national geologic repository for disposal. The current 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 basin transition activities in parallel with fuel and sludge removal, and looking for new approaches to basin decontamination and decommissioning. We will continue to ensure we maintain strict quality and safety controls. Beginning in 2018, we will retrieve the K-Basin spent nuclear fuel from its temporary storage in the CSB and ship it to a national geologic repository for permanent disposal.

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 different processes, appropriately repackaged into stainless steel containers designed for 50 years of safe storage, and shipped to other DOE sites

for reuse, long-term storage, or final disposition. Currently, PFP is mid-way through a 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 material in hundreds of gloveboxes and miles of exhaust ventilation ducts that must be retrieved, packaged, and disposed. Accelerating the removal of plutonium allows us to accelerate the clean out and demolition of the 50 structures that make up the Plutonium Finishing Plant. To accelerate risk reduction we will:

- Accelerate from 2014 to 2005 deinventory shipments of Hanford's stabilized plutonium to DOE's Savannah River Site or an alternative secure location. This would further DOE's plutonium consolidation goals for national security, dramatically reduce the safety and security costs, and allow us to decommission PFP in a more cost-effective and efficient manner since security concerns would be eliminated.

- Develop a contingency option to ensure the plutonium materials can be shipped from PFP on a schedule that will not impact the deactivation and removal of the facility structures. We are working on an option to utilize an alternate secure onsite storage vault for interim storage of the plutonium in case the shipments to the Savannah River Site are delayed and impact our schedule. This alternative storage vault would only be capable of receiving and storing plutonium packaged for shipment. The purpose of this vault would be to allow the PFP deactivation to proceed on schedule and allow the plutonium to be shipped offsite as soon as possible.

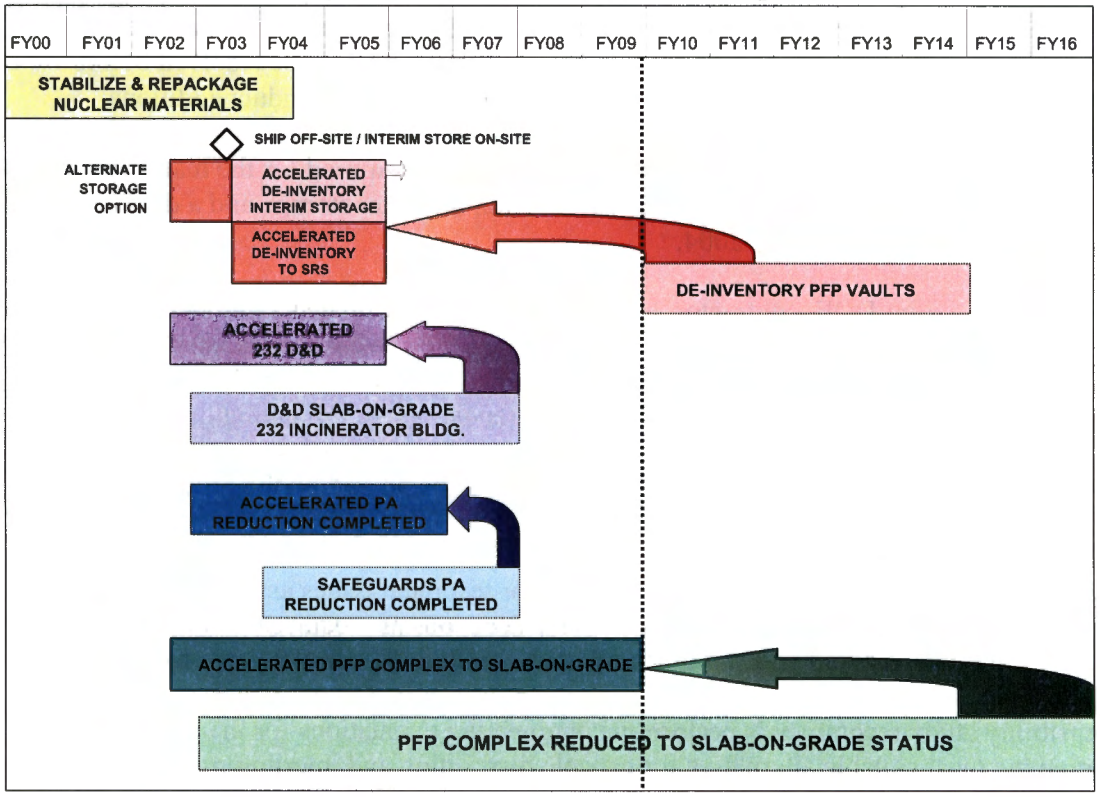
- Characterize, remove, package, and disposition sufficient amounts of the plutonium held up in equipment, glove boxes, and ventilation systems to eliminate the security protected area at PFP by 2006.

- Accelerate deinventory of PFP, including shipping the slightly irradiated and non-irradiated plutonium/uranium oxide fuel currently stored at PFP. We assume the slightly irradiated fuel will be stored on site at the Canister Storage Building and the non-irradiated fuel will be shipped to the Savannah River Site.

- Accelerate from 2016 to 2009 the clean out and demolition of approximately 60 buildings/structures, saving over $500 million in lifecycle costs, including a $100 million annual mortgage cost.

Remediation and closure of the PFP complex footprint is addressed as part of Strategic Initiative 5. A graphical representation of the accelerated clean up plan for PFP is provided in Figure 11.

Figure 11. PFP Accelerated Cleanup Plan



Cesium and Strontium (Cs and Sr) Capsules - Hanford's 1,936 cesium and strontium capsules, with about 130 million curies of radioactivity, contain stable Cs and Sr salts produced approximately 20 years ago from tank waste materials. The salts are sealed in stainless steel containers. Some of the capsules had been deployed for commercial purposes and have been subsequently returned. The capsules 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. The water removes heat and provides radiation shielding. The stored capsules contain about 37% of the site's total radioactivity. DOE classified the capsules as high-level mixed waste and, as such, they are also subject to regulation under RCRA. Our previous planning assumption was that the capsules would be transferred to the WTP beginning in 2018 for vitrification and subsequent disposal off-site, although we have not completed detailed planning for that alternative.[19] Because the present storage configuration for the capsules presents several challenges, including vulnerability to accidents, security threats and high annual surveillance and maintenance costs, we need to evaluate other storage and disposal alternatives.

We believe it will be possible to lower worker exposure, reduce security vulnerabilities, and achieve lifecycle cost savings by placing the capsules into dry storage by 2008 and subsequently

[19] If an affirmative decision on non-vitrified offsite disposal of the capsules cannot be made by the end of 2006, DOE will develop a backup plan to vitrify the capsules. The plan will also identify a "no-later-than" date for switching to the vitrification pathway.

disposing of them in a national geologic repository. The dry storage configuration will provide conductive or convective cooling, as well as adequate shielding to reduce radiation exposures and ensure safe, secure storage. However, a number of issues need to be resolved before we can pursue this approach with full confidence. Accordingly, we plan to conduct additional evaluations to determine possible merits of interim dry storage and concurrently will work with regulators to establish capsule packaging and other protocols required for the materials' non-vitrified offsite disposal. Our goal is to make a decision on better storage and a disposition pathway for the capsules by early 2004.

As part of C3T, a joint DOE, contractor, and regulator group evaluated a number of options for accelerating capsule disposition offsite and/or reducing lifecycle costs associated with the capsules. The group identified potentially viable alternatives to the current baseline including shipping the capsules directly to a national geologic repository – eliminating the need for the capsules to be vitrified and saving hundreds of millions of dollars to design, construct, operate, and D&D a capsule-handling annex. Another alternative considered by the group was packaging and shipping the capsules to WIPP for disposal.

The team also identified the various regulatory and/or technical issues associated with the two alternatives. Our regulators and we agree that early decisions are required on direct disposal alternatives in order to avoid wasting time and money following parallel paths forward.

The feasibility study recommends performing engineering evaluations for the above options to determine the most suitable alternative for capsule disposition and interim on-site storage. The scope of the studies includes developing implementation details that address various thermal, structural, packaging, transportation, and other technical issues. The engineering studies will be included in 2003 planning and will address:

- The benefits of dry storage, including suitable onsite storage locations for the interim.
- Packaging and transportation for moving the capsules to dry storage onsite to identify the number and configuration of packages needed.
- WESF upgrades needed for loading capsules for dry storage.
- Packaging required to meet appropriate repository waste acceptance criteria including performance credit for engineered package components and contents; any Land Disposal Restriction (LDR) issues; and analyses required, which are likely to be comparable to those required for other waste materials that, by law, require permanent isolation.

4.1.4 STRATEGIC INITIATIVE 4 - ACCELERATE WASTE DISPOSAL [20]

Description

In addition to the tank wastes, Hanford has 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. Hanford also has approximately 37,000 drums and 1,200 boxes of post-1970 suspect TRU buried in retrievable storage in the low-level burial grounds on the Central Plateau. Finally, a number of the 800 individual non-tank farm waste sites on the Central Plateau (burial grounds, cribs, trenches, and leak sites) may contain transuranic constituents that must be recovered and processed for disposal at WIPP. As we proceed with Hanford cleanup (taking down buildings, remediating waste sites, and retrieving the suspect TRU), more of these wastes will be generated and will need to be characterized, possibly treated, and disposed.

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 the suspect TRU 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.

We are treating and disposing of the above-ground waste inventory, 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 DOE sites are affected by waste disposal issues at Hanford, and other sites, in turn, affect us.

Because our ability to treat MLLW is limited and we do not have all the necessary environmental documents in place, we are currently treating and disposing of only small quantities of Hanford-generated MLLW, and are not accepting any MLLW from offsite DOE generators. This has impacted disposal of MLLW complex-wide, as Hanford is the only DOE site with a permitted MLLW disposal facility capable of accepting offsite waste.

Due to funding constraints and higher priorities, we have not aggressively pursued TRU retrieval thus far. We have managed, but not reduced, the risk this un-retrieved suspect TRU waste poses to the environment.

Under this initiative, we will accelerate our MLLW treatment and disposal, accelerate the retrieval of post-1970 suspect contact-handled (CH) TRU waste from the burial grounds, and accelerate the shipment of TRU to WIPP for disposal. We will also address DOE and state

[20] DOE and Ecology are currently negotiating TPA commitments regarding Hanford Site TRU waste and MLLW under milestone M-91. The resolution of these negotiations is likely to affect the wording of this initiative.

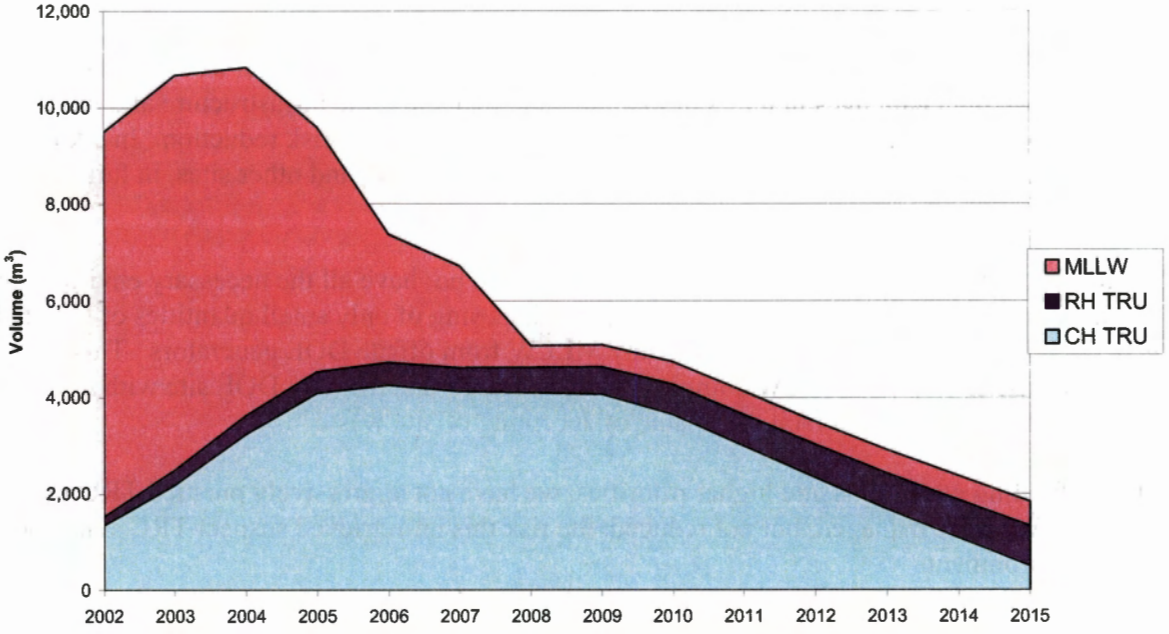
policies regarding the acceptance of LLW and MLLW and limited quantities of TRU from other sites in the DOE complex.

To support elements of this initiative, we have prepared and issued for public comment the draft Hanford Site Solid Waste Environmental Impact Statement (HSW EIS). We are also evaluating utilizing lined, monitored trenches for disposing of both low-level and mixed low-level waste. The HSW EIS will provide a suite of options for decision-makers that will support 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 maintaining its safety and security is much more expensive. By accelerating the Hanford MLLW and TRU disposal effort, we will reduce the risk this waste poses to the environment, as well as the costs associated with continued maintenance and surveillance of MLLW and TRU storage containers and facilities at Hanford. Figure 12 shows the progress we will make in reducing the above-ground inventory.

Figure 12. Reduction in Hanford Above-Ground Waste Storage under this Initiative



Understanding the risks posed by both the post-1970 suspect buried TRU, which is located in 26 areas of the low-level burial grounds, and the waste disposed of prior to 1970 that contains transuranic constituents (known as pre-1970 TRU), is critical to formulating an overall strategy for Central Plateau cleanup. We will, therefore, accelerate retrieval of the post-1970 suspect TRU waste, concentrating first on the areas that contain the highest amounts of plutonium, with the goal of completing retrieval operations for the contact-handled post-1970 TRU by 2010. In

parallel with this initial retrieval of TRU, we will work with our regulators to develop scoping, risk and associated environmental documentation supporting decisions regarding the extent to which remaining post- and pre-1970 TRU must be retrieved. We intend to continue to focus our retrieval activities on buried wastes that pose the highest risk.

Dealing with our own waste will also help pave the way for Hanford to assist in the packaging and shipment to WIPP of small quantities of TRU from other sites. In order to manage small quantity site transuranic waste, Hanford will be designated as one of three "hubs" nationwide that will serve as transshipment points. We expect CH TRU to be transferred to WIPP in a timely manner, but remote-handled (RH) TRU waste may stay for several years pending final waste acceptance approval at WIPP. By taking and temporarily storing TRU waste from small quantity closure sites, we allow those sites to shut down earlier and at less cost by avoiding the expensive facilities and certifications required to ship waste to WIPP. Hanford's state-of-the-art TRU processing facility and certification from WIPP, augmented by equipment from WIPP, will enable us to easily handle the limited quantities of TRU from these small sites at no net cost to Hanford. Their successful closure will make available additional funding for other cleanup sites, including Hanford.

The issue of receiving waste from other sites is very contentious, not just here but across the DOE complex. 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.

But Hanford is part of a complex of DOE sites, and no site can be entirely independent. Hanford has already begun to ship some wastes and material offsite (excess uranium to Ohio and its first TRU to WIPP) and expects to ship much more in the future -- our plutonium is destined for Savannah River, and our spent fuel and high-level waste will be disposed of in a national geologic repository. At the same time, the Waste Management Programmatic Environmental Impact Statement Record of Decision in 2000 designated Hanford as a disposal site for low-level and mixed low-level waste from around the complex, and we are currently accepting LLW from various DOE sites, and MLLW from the U.S. Navy.

This mutual dependency requires us to align our accelerated cleanup schedule with other DOE shipping and receiving sites, most prominently WIPP, which is pursuing a strategy to accelerate the disposal of the DOE complex's legacy CH TRU (post-1970 TRU and Central Waste Complex TRU inventory) by 2015. It will, however, remain open and continue to accept TRU through its original closure schedule of 2035.

Approach

- After addressing agency, Tribal and stakeholder comments, we will finalize the Hanford Site Solid Waste Environmental Impact Statement (HSW EIS) and then issue a ROD. The HSW EIS contains analysis of the impact of receiving additional waste, and the ROD will provide the policy and path forward for the waste management activities described in this initiative.

- Accelerate by four years (from 2012 to 2008) the treatment and disposal of about 14,000 cubic meters of MLLW (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 MLLW in the Central Waste Complex storage facilities. We will continue to treat the majority of the MLLW using available commercial capability, but will provide onsite treatment capability when required. In addition, we will continue to work with our regulators to determine the most cost-effective path forward for disposal of MLLW while remaining protective of the public, the environment, and our workers – including exploring whether to dispose of current on-site MLLW in ERDF.

- Accelerate TRU waste operations by deploying mobile TRU waste processing systems, which can provide an additional capacity to certify for shipment up to 4,000 drums per year for disposal at WIPP. The mobile systems, provided and funded by DOE's Carlsbad Field Office, will allow us to significantly increase our Hanford TRU shipping rates to WIPP over the next eight years, and be used to process small-quantity-site TRU. The systems will also allow us to accelerate retrieval of Hanford's CH TRU drums from 2013 to 2010 and their shipment to WIPP from 2027 to 2015.

- Reduce risk on the Central Plateau more effectively and efficiently by accelerating to 2006 the retrieval of 15,000 (of 37,000) drums of CH suspect TRU waste from the low-level burial grounds. These drums contain 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. At the same time, we will work with our regulators to develop scoping, risk and associated environmental documentation regarding the extent to which remaining post- and pre-1970 TRU must be retrieved. The results will be integrated with decisions being made on waste site remediation. We will retrieve all required remaining post-1970 CH-TRU waste by 2010, with the exception of items that must be processed through the designated RH (and very large items) facility.

- Increase the processing rate of CH-TRU to the point that Hanford's legacy small-container CH-TRU will be processed, certified, and shipped to WIPP by 2015. This acceleration will allow us to process CH-TRU waste by 2027, and to close the Waste Receiving and Processing Facility five years early, saving tens of millions of dollars in lifecycle costs.

- Continue to work with the national TRU program on the development of waste acceptance requirements for RH TRU waste. Once these requirements are available in 2005, we can finalize Hanford's schedules for processing and shipping of RH TRU waste to WIPP. Current planning is for shipments to begin in 2013, but we are evaluating potential acceleration opportunities.

- Finally, by using our 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 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 sites will allow for the accelerated closure of some sites and significant cost savings that benefit the DOE complex. To do this we will ensure we have existing capacity and funding sufficient to process, dispose, and in the case of TRU, ship this material.

4.1.5 STRATEGIC INITIATIVE 5 - ACCELERATE CENTRAL PLATEAU CLEANUP

Description

The Central Plateau consists of about 75 square miles near the middle of the Hanford Site. It contains about 900 excess facilities formerly used in the plutonium production process, including five massive chemical processing facilities, or "canyons," as well as roughly 800 individual non-tank-farm waste sites, including both buried solid waste and contaminated soil. It is also home to ongoing waste management operations (including the low-level waste burial grounds, liquid waste facilities, the Waste Receiving and Processing Facility, high-level waste tanks, and, eventually, the Waste Treatment Plant) and infrastructure services (such as power, water, and telecommunication lines), whose continued use or start up are needed to support the cleanup mission. This collection of facilities, waste sites, canyons, and ongoing waste management operations is spread across the Plateau.

To successfully complete the Hanford cleanup, we must reduce the environmental risks posed by the Central Plateau's large and diverse facilities, disposition them as soon as possible, and tackle the surrounding waste sites. This work must be integrated as part of an overarching strategy that protects the groundwater beneath the Hanford Site and eventually makes the Plateau's core zone available for industrial use – the consensus end-state "vision" articulated by the Hanford Future Site Uses Working Group, the Hanford Comprehensive Land Use Plan EIS ROD, and the Hanford Advisory Board Exposure Scenarios Task Force.

This initiative is aimed at accelerating cleanup by grouping the work in order to make best use of resources, increase efficiency, and in some cases, get to higher-priority work sooner. Some of the groupings will be of similar cleanup work (for example, sites containing similar types of waste but located in different areas of the Central Plateau), and others will be "regional" closures, which will clean up all the facilities and waste sites within a certain geographic area. It's a smarter approach that integrates overall Plateau cleanup and groundwater protection (covered in Strategic Initiative 6), and for the first time coordinates disposition of excess facilities and canyons with remediation of the significant number of waste sites surrounding them.

Approach

From this initiative, in the short term, will come two major actions.

- In 2003, we will develop an initial plan to optimize the sequencing of waste site and facility cleanup, infrastructure alignment, and tank farm closures. We will prioritize activities to focus first on those areas that pose the highest potential threat to human health or the environment (including the groundwater) and will look for opportunities to increase our efficiency through logically grouping cleanup sites. We will use a decision strategy based largely on the risk and regulatory framework we are currently developing with Ecology and EPA to guide the timing, grouping, and sequencing decisions; and we will comply with applicable regulatory requirements and processes. We will refine this

plan as new data becomes available, and in the 2008 timeframe will issue a comprehensive plan to ensure that TRU waste retrieval, waste management operations, tank farm waste retrieval and closures, vadose zone and groundwater remedies, and infrastructure needs are fully integrated with the remediation of waste sites and the disposition of facilities.

- We will demonstrate both the benefits of using "regional" cleanups, and an innovative approach to dealing with Hanford's canyon facilities by beginning the "U Plant Regional Closure" project in 2003. It will integrate disposition of the canyon itself with cleanup of its ancillary facilities and nearby waste sites, some of which have high uranium/technetium inventories and are potential contributors to groundwater contamination (see Strategic Initiative 6).

  Using U Plant as a pilot, this project will demonstrate the benefits of using the five canyons' robust lower-level structures (with walls up to 9 feet (2.7 meters) thick) to dispose of appropriate debris and wastes from nearby facilities and waste sites, rather than completely demolishing them and disposing of the resulting waste in the Environmental Restoration Disposal Facility (ERDF). Once filled with the waste and stabilized, the outer walls of the canyon facilities would be partially collapsed to reduce the elevation profile, and the structure would be covered with a protective environmental cap. We will maintain the accepted standards for protecting human health and the environment (including long-term groundwater protection) by identifying and bounding the types of wastes that can be disposed of in this manner.

The U Plant Regional Closure project will include and integrate:

- Completion of the CERCLA ROD (including risk assessments) for disposition of the U Plant Canyon and ancillary facilities in 2003;
- Implementation of remedial actions for 33 regional waste sites to be completed under a separate CERCLA ROD (including risk assessments);
- Disposition of the U Plant Canyon ancillary facilities (dismantled, razed, and/or disposed in place);
- Consolidation of wastes from the U Plant Canyon and ancillary facilities within the canyon (cell and in-canyon space to be utilized as appropriate);
- Reduction of the profile of the U Plant Canyon down to the deck level, placement of a surface barrier over the razed U Plant Canyon, ancillary facilities, and adjacent waste sites; and
- Other regional closure considerations such as infrastructure, groundwater protection, and long-term monitoring.

This initial work will give us experience in defining and implementing a disposition strategy for a significant contiguous block of the Central Plateau, and what we learn will guide our planning for subsequent, more difficult remediation of facilities and land areas on the Plateau. In particular, it will improve our approach to work at the remaining four canyons, where the contamination levels are significantly higher. We will provide a plan for their disposition, including scope, schedule, budget and recommendations on potential waste disposition

opportunities, by September 2003. The disposition of the Plutonium Finishing Plant (PFP) above-grade structures is covered separately under Strategic Initiative 3.

Not every Central Plateau facility or waste site will be part of this grouping approach. We will include disposition of the remaining facilities (including ALE Reserve facilities and PFP's below-grade footprint) and waste sites in our 2003 sequencing plan and prioritize them to focus on reducing the source-term and minimizing the threat to human health and the environment, especially groundwater. In 2003, as part of Hanford's fiscal year 2005 budget request, we will expand this initiative to accelerate the completion of these remaining facilities and waste sites.

Rationale

Optimizing facility disposition and waste site remediation on the Central Plateau has clear benefits, including more efficient cleanup and closure operations, the ability to optimize infrastructure and resources (including highly skilled labor and raw materials), and an opportunity to prioritize facilities and waste sites having the highest risk to public health and the environment (including groundwater) to provide greater risk reduction earlier.

Developing an integrated strategy will allow us to tie together several other significant activities currently or soon-to-be underway, including waste site characterization, tank waste retrieval and closure demonstration projects, TRU waste retrieval studies, infrastructure alignment, evaluations of technology to clean up the 618-10 and 618-11 burial grounds, groundwater protection recommendations and the clear definition of acceptable cleanup "end states."

We believe using the canyon facilities for some waste disposal, and disposing of the canyons themselves in place, could save tens of millions of dollars and reduce the amount of disposal space needed in ERDF. More important, this initiative leads to the disposition of the canyons much earlier than the current baseline, which defers their completion to beyond 2035. As part of *our accelerated remediation schedule, the U Plant regional closure will be complete by 2011 – 14* years earlier than the current plan for U Plant only. Disposition of canyon facilities will undergo an environmental process that will include public review to address concerns, including waste inventory, protection of groundwater, and remediation options.

4.1.6 STRATEGIC INITIATIVE 6 - ACCELERATE CLEANUP AND PROTECTION OF HANFORD GROUNDWATER

Description

Hanford's groundwater is an important resource and the primary pathway for contaminants from Hanford reaching the Columbia River. This initiative will institute a coordinated set of actions to protect Hanford's groundwater and the Columbia River by removing or isolating important contaminant sources on the Central Plateau, remediating the contamination sources exterior to the Central Plateau core zone, dramatically reducing the conditions that have the potential to drive contaminants into the groundwater, treating contaminated groundwater, and integrating all regulatory requirements for monitoring.

In December 1992, the Hanford Future Site Uses Working Group recommended the Central Plateau be developed into an exclusive waste management area "core zone" surrounded by a "buffer zone." The ROD for the Hanford Comprehensive Land Use Plan EIS confirmed that recommendation. More recently, the Hanford Advisory Board Exposure Scenario Task Force and the C3T's Hanford Site Groundwater Strategy built on those recommendations, providing better definition to cleanup objectives and exposure scenarios and agreeing that we will clean the core zone of the Central Plateau to an industrial use standard.

The primary goal of these processes has been to develop consensus on how we will leave the Central Plateau at the conclusion of the Environmental Management mission. With the help of our stakeholders, we have developed a framework for assessing risk and determining how to implement permanent, protective solutions.

We do not yet have the technology to solve some of Hanford's toughest groundwater protection problems. Hanford, Headquarters EM-50, and the DOE Office of Science are continuing to invest in new technological solutions. The focus of this strategic initiative is accelerating actions for which technology is available so we can get on with protection and remediation of groundwater.

With this coordinated set of actions, by 2012 we will have isolated important core zone contaminant sources from the groundwater and the accessible environment and will be well on our way to a fully protective, permanent groundwater solution for the vast majority of the Hanford Site.

Rationale

We began in the early 1990s to protect Hanford groundwater by ceasing to discharge liquid waste to the soil, eliminating waste streams, rerouting and treating waste streams, and pumping and treating several major groundwater contaminant plumes. While these were important first steps, we need to do much more to limit the migration of contaminants from waste sites on the Central Plateau to groundwater and the Columbia River.

To begin, we must start remedial cleanup and closure actions as soon as possible for the highest-risk waste sites. The current baseline for 200-Area waste site remediation does not begin in earnest until after 2008, and final remedial measures for groundwater contamination are not addressed at all.

The C3T groundwater group is developing a groundwater strategy for Hanford that will be released in October 2002. The strategy will identify actions needed to protect the groundwater from further degradation, data needed to make sound remediation decisions, and activities and facilities necessary to remediate existing groundwater plumes. The team examined a broad range of activities with the potential to impact groundwater and the Columbia River, including tank farms and associated waste sites, movement of spent fuel and sludge away from the river, waste disposal, canyons and other facilities, US Ecology's low-level waste disposal operations, and existing groundwater treatment activities. Based largely on this effort, we have developed five key elements to accelerate protection of groundwater in this strategic initiative.

Approach

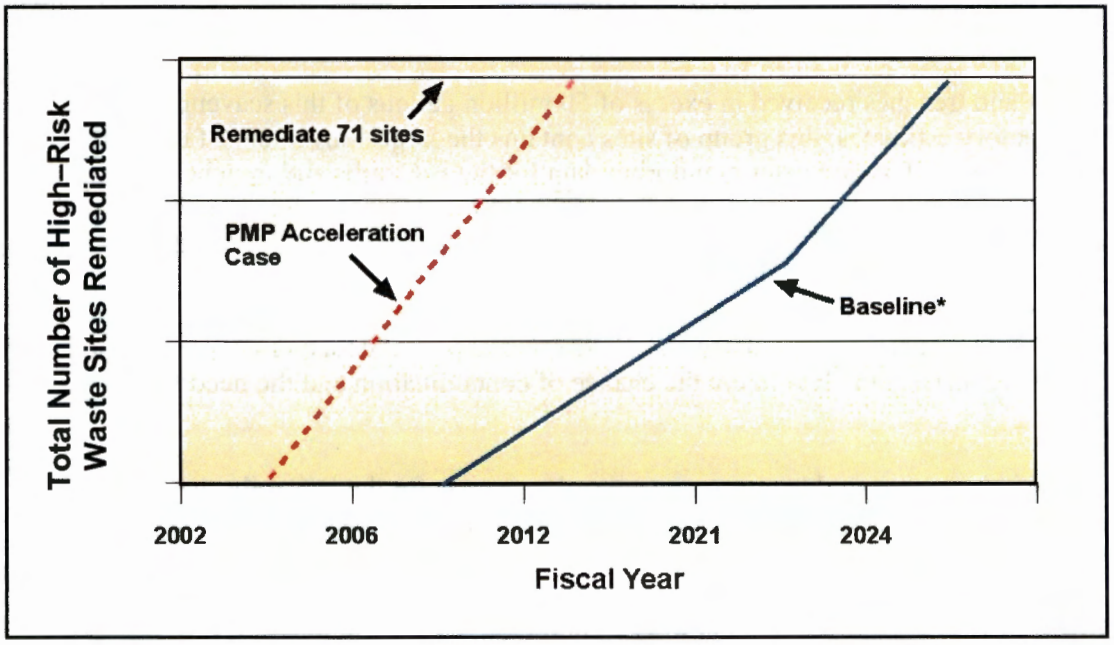
Protection of Hanford's groundwater requires the development and implementation of a strategy to limit and control the continued migration of contaminants already in the soil and groundwater. To do this, we will: 1) control high-risk sources, 2) shrink the contaminated footprint of the Central Plateau, 3) take groundwater protection measures to reduce the artificial recharge and its impacts on subsurface contamination, 4) resolve issues associated with moving from interim to final actions, and 5) integrate site monitoring actions used to detect, delineate and evaluate the effectiveness of cleanup actions.

To undertake this initiative, we expect little or no change in our regulatory process or approach. However, we might request a further regrouping of select waste sites under different CERCLA decisions to more quickly address high-risk source control. For other actions, like well decommissioning, water system upgrades, and septic system improvements, a formal TPA decision-making process is not required, but we may pursue regulator agreement in order to ensure a more permanent cleanup solution.

Key Element 1 – High-Risk Source Control

We have a number of waste sites that pose a high risk to groundwater. Some of these sites have large, mobile contaminant inventories and existing groundwater plumes. Others have little existing groundwater contamination, but early action may prevent or significantly reduce future releases and further contamination of the vadose zone (the area between the soil surface and groundwater). The contaminants of primary concern on the Central Plateau are technetium-99, uranium, iodine-129, and carbon tetrachloride. These contaminants are mobile, remain dangerous for a significant period of time, have been released in large quantities, and can potentially move in the groundwater to the Columbia River and impact human health and the environment. Figure 13 shows the progress we will make in reducing the high-risk waste sites.

Figure 13. High-Risk Waste Site Remediation



To address these waste sites, we will primarily use surface barriers to reduce the infiltration of water, which drives contaminants through the soil to the groundwater. Barriers will be constructed to specifications jointly established with the regulatory agencies. After the barriers are installed, we will monitor their performance to ensure they are working as effectively as intended. In some cases, barriers will be applied to the existing conditions; in others we may need to remove, treat and dispose of waste materials first.

Under this acceleration plan, we have selected four groups of waste sites for early action to isolate high-risk sources through the use of barriers.

U Plant Cribs and Trenches – Liquid waste streams from U Plant with high concentrations of uranium and technetium-99 were disposed to cribs and trenches adjacent to the facility. Elevated levels of both uranium and technetium-99 are present in the groundwater at concentrations that prompted early study. The result has been the understanding to date that only a small portion of the inventory has migrated into the groundwater and that the majority of these contaminants still reside in the vadose zone. Ongoing studies are evaluating the extent of lateral migration of contaminants and other non-uniform conditions in the vadose zone.

Under this initiative, we will begin source control measures for U Plant cribs and trenches in 2005, rather than 2014 as exists in the current baseline.

B/C Cribs and Trenches – During the 1950s, much of the tank waste produced at B and T Plants was reprocessed at U Plant to recover uranium. After reprocessing, the waste was disposed of by discharging it directly to the soil or by flowing it into a tank or series of tanks and allowing most of the solids to settle out, with the remaining liquid being discharged to the soil. These waste sites contain some of the highest inventories of radioactive constituents disposed to the ground at Hanford.

The B/C cribs and trenches received in excess of 50 million gallons of this scavenged tank waste. Based on inventory estimates, this group of sites contains the largest inventory of technetium-99 discharged to the soil. Groundwater monitoring data for the B/C cribs and trenches is limited, but little waste from these sites appears to have reached the water table. Releases of technetium-99 from these waste sites could lead to future groundwater contamination that would require active remediation. The fact that they are located in the southeast portion of 200 East Area also means that any such releases to the groundwater would have a very short travel time to the core zone boundary. The earlier these sources have barriers in place to reduce infiltration through the contaminated subsurface, the less likely the chance of contamination and the need for active remediation.

Under this initiative, we would begin source control measures for the B/C cribs and trenches in early 2007 after we characterize the extent of contamination, and complete work on all 28 waste sites by mid-2012.

PUREX Cribs and Trenches – A number of cribs and trenches surrounding the PUREX Plant received high-volume condensates and waste from operations. These sites are the primary sources of the nearly 80 square-mile groundwater plume of tritium and nitrate that covers much of the site between the Central Plateau and the Columbia River. Although the extent of the tritium and nitrate groundwater contamination has receded since we stopped discharging liquid to these sites in the early 1990s, the sites remain likely sources for continuing, significant contamination from iodine-129. These sources are also located in the southeast portion of 200 East Area near the core zone boundary and could release iodine-129 at concentrations requiring active groundwater remediation.

Under this initiative, we will start remedial action on cleanup of selected PUREX cribs and trenches in late 2008 and be complete by the end of 2011, well ahead of the 2017 end date in the existing baseline.

Plutonium Finishing Plant Carbon Tetrachloride Sites – Several sites near PFP received wastes containing carbon tetrachloride and plutonium. These contaminants each represent significant risk but require different remedial actions, which may be difficult because they are often co-located.

For carbon tetrachloride, we need to take aggressive action to contain and reduce the large inventory in the vadose zone and the groundwater. We need to learn the extent of carbon tetrachloride contamination throughout the soils and in various levels of groundwater. Remedies are limited, but include vapor extraction for soil contamination and pump-and-treat systems for the groundwater.

For plutonium, the likely remedial alternatives are isolation with a robust barrier system or exhumation, treatment (if required) and shipment offsite. Clearly, we need to ensure that actions to remediate plutonium, such as constructing a surface barrier, do not limit our opportunities to remediate carbon tetrachloride via vapor extraction or pumping and treating. We are undertaking a comprehensive investigation of the area surrounding PFP and are hopeful that we will learn what actions we should take in the near term to remove carbon tetrachloride from the vadose zone and groundwater.

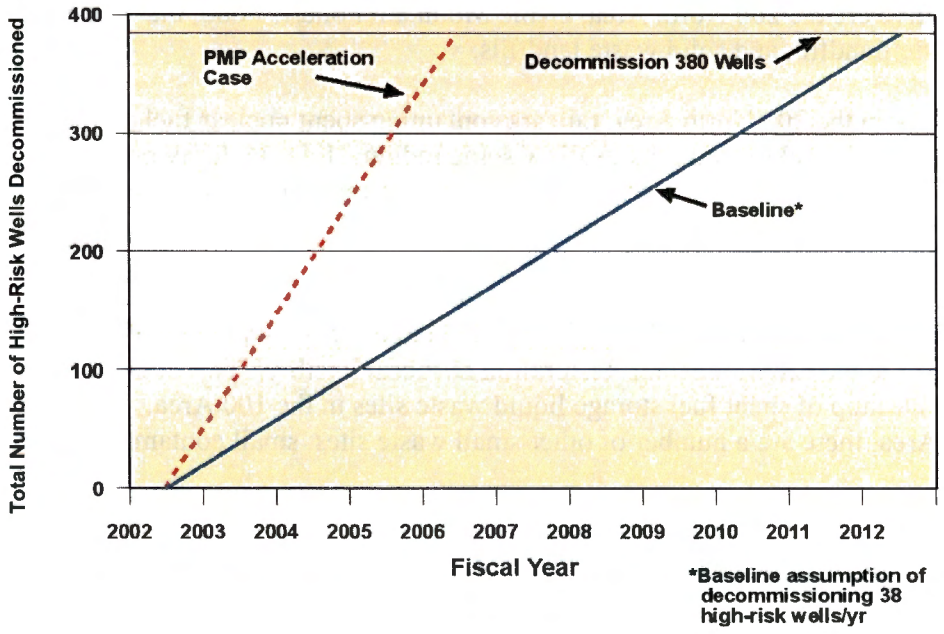
Our current baseline calls for us to start waste site remediation in 2014. Under this initiative, we would begin remediation in 2009 and complete it in 2011. We expect the Office of Science and Technology "Alternatives For Carbon Tetrachloride (CCl_4) Source Term Location in the 200 West Area at Hanford" project to provide technologies to accelerate the baseline characterization effort.

Key Element 2 – Dramatically Reduce Recharge Conditions

As water moves through contaminated soil, it picks up contaminants and transports them to the groundwater. We have identified several actions to reduce the artificial movement of water through the soil column and to reduce or eliminate pathways for water to leach radioactive and hazardous substances from the vadose zone and drive them into the groundwater.

Well Decommissioning – We have 2,150 wells on the Hanford Site that require decommissioning, in part because they provide potential pathways for surface water to penetrate into the vadose zone and drive contaminants toward the groundwater. Some of these wells are located in or adjacent to waste sites and pose a high risk. Under this initiative, we will decommission 380 high-risk and 70 unused wells near remediation activities on the Central Plateau by 2006 as shown in Figure 14. The remaining 1,700 wells will be decommissioned in 2018, six years earlier than the current baseline. We will pursue a procurement strategy that will minimize the decommissioning cost per well.

Figure 14. High-Risk Wells Decommissioned



Aging Water Lines – The Hanford water system, which supplies both the potable and fire suppression systems, is over 50 years old, is deteriorating and experiencing an increasing rate of leaks and major failures that contribute to groundwater contamination. Many leaks/failures have been in the Tank Farm waste management areas and other soil contamination sites in the 200 and 300 Areas. In addition, the primary reservoirs in the 200 Area are currently at risk and could fail unexpectedly. If this occurred, millions of gallons of water would be added to the soil column and facilities could be without automatic fire suppression systems pending repair. We are working to reduce the leakage and potential for line breaks by reducing systems pressure (new pumps), and inspecting, repairing/replacing portions of the system near high-risk waste sites.

Run-on/Run-off Control – Water can pool on or near a waste site as a result of rain or melting snow. This surface run-off can flush contaminants from the vadose zone into the groundwater, or off the waste site to adjacent land. We will survey the waste sites, burial grounds, and other facilities that may be susceptible to these types of occurrences to identify locations where controls are appropriate and will "berm" and/or drain control areas by September 2004. We will focus our efforts on areas where final remedies may be many years out, like the waste sites immediately adjacent to tank farms.

Septic Systems – While we stopped discharging liquids from process operations in 1995, we continue to have liquid discharges in the 200 Areas primarily from sanitary septic systems, which are permitted by Ecology. These systems may adversely impact current pump-and-treat operations on the Central Plateau, but in most cases ceasing or rerouting these discharges is not cost effective. However, in particularly sensitive areas, we will reroute the septic discharges. In addition, we are making an effort to ensure conservation measures are in place and workers recognize their actions may contribute to groundwater contamination.

Key Element 3 – Shrink the Footprint of Contaminated Areas

Several groups of waste sites are located outside the core zone of the Central Plateau. Their early remediation and closure, together with the environmental restoration activities to be completed under the River Corridor contract, will virtually eliminate all groundwater contaminant sources outside of the core zone. Under this initiative, we intend to complete these actions by 2012, instead of 2026 as our current baseline projects. The key sites we will address under this initiative are the 200 North Area, Gable Mountain Pond/B Pond, the Non-Radioactive Dangerous Waste Landfill, and solid waste landfills.

200 North Area – In the 200 North Area, railcars containing spent nuclear fuel were once stored for a period of several weeks or months to allow some radionuclides to decay prior to reprocessing. The railcars required a constant flow of water through them to thermally cool the elements. The water was then disposed at several sites within the 200 North Area.

EPA issued a CERCLA decision for cleanup of the 200 North Area as part of an overall cleanup decision for the 100 Area. The remedy for these sites is to remove, treat, and dispose of the contaminated soil in the Environmental Restoration Disposal Facility. This action is nearly identical to the cleanup of spent fuel storage liquid waste sites in the 100 Area. However, within the 200 North Area, there are a number of other small waste sites, small contaminated structures,

and several contaminated railcars that were not included in the scope of the previous cleanup decision. We need to develop cleanup plans for these sources of contamination as well as the major waste sites. We intend to seek a modification to the existing CERCLA decision to include the other small sites and structures and illustrate that actions to remediate these sources would be consistent with the previously selected cleanup remedy.

Gable Mountain/B Ponds - The Gable Mountain Pond and B Pond complex is a series of interconnected ponds and ditches that had been used to receive large volumes of slightly contaminated water from process operations at PUREX and B Plant. These sites have relatively low levels of residual contamination and few significant groundwater plumes.

The remedy for the Gable Mountain Pond and B Pond complex is expected to be less extensive than the 200 North Area. Many of these sites do not require surface barriers because little residual contamination remains in the vadose zone beneath these ponds and ditches. The remedy for these large ponds may be surface stabilization with clean topsoil and re-vegetation with or without selective removal of contaminated soil. Natural attenuation appears to be the most likely remedy for the groundwater. The Gable Mountain Pond and B Pond complex's proposed CERCLA plan will be issued for public comment in March 2003, with a decision expected by early 2004.

Non-Radioactive Dangerous Waste Landfill (NRDWL) and Solid Waste Landfills – The NRDWL and associated solid waste landfills, located to the east and southeast of the Central Plateau core zone, are geographically grouped for early action. Although not considered high-risk sites, they have released (and will likely continue to release) volatile organic solvents to the groundwater at concentrations that exceed water quality standards.

The actions recommended for these sites would be to remediate the NRDWL by installing a surface barrierconstructed to the specifications jointly established with the appropriate regulatory agencies. The adjacent solid waste landfill should not require a robust infiltration barrier and could likely be closed with a standard solid waste landfill cover.

Under existing plans, we had not intended to close these sites for two decades (until 2026). However, under this plan we intend to reprioritize these cleanup actions and work with our regulators to determine whether we might close the landfills using solid waste landfill closure requirements, rather than CERCLA requirements. Should we be successful, we could close these sites in 2007.

618-10 and -11 Burial Grounds – These burial grounds contain both contact- and remote-handled TRU waste and are considered high-risk sites for both their inventory and their potential for continued groundwater contamination. To address them, we will work on the design and implementation of retrieval technologies and treatment capabilities with the intent of accelerating retrieval to beat the 2018 Tri-Party Agreement milestone. We expect the HQ-EM-50 Office of Science and Technology to provide technologies to support this goal.

Key Element 4 – Resolve Current Pump-and-Treat Operations

Pump-and-treat is a remediation technology for cleanup of contaminated groundwater. The groundwater is pumped to the surface through extraction wells and then treated to remove the contaminants. There are five pump-and-treat operations being used to address groundwater contamination plumes on the Hanford Site. In the 100 Area (River Corridor), two systems are being used to treat chromium (100-K and 100-H Areas) and one system is being used to treat strontium-90 (100-N Area). In the 200-West Area (Central Plateau), there is a pump-and-treat system for carbon tetrachloride groundwater plume remediation and a system for uranium and technetium-99 remediation. Of these five operations, we have selected two for accelerated action to improve performance and develop final remedies. The two operations are the carbon tetrachloride plume in 200-West Area and the strontium-90 groundwater plume in the 100-N Area. The carbon tetrachloride plume is the highest-risk groundwater plume on the Central Plateau and requires significant additional characterization and remediation development. The strontium-90 pump-and-treat program has proven to be ineffective and an alternative needs to be developed. The accelerated initiatives will facilitate development of alternative remediation strategies and implementation of final groundwater remedies for these critical groundwater plumes.

Carbon Tetrachloride Plume – Groundwater pump-and-treat operations began in 1995 to remediate the high-concentration portion of the carbon tetrachloride groundwater plume. Contaminated groundwater is pumped from the upper 15 meters of the aquifer on the down-gradient side of the plume, and the treated water is re-injected on the up-gradient side. The extracted groundwater contains dissolved carbon tetrachloride. However, carbon tetrachloride was discharged to the soil column in both a dissolved phase in water and as a separate organic phase. The separate organic phase of carbon tetrachloride is called a dense non-aqueous phase liquid (DNAPL) because it is denser than water and has limited solubility. As a result, if carbon tetrachloride is in the aquifer as a DNAPL, it may continue to slowly dissolve and feed the dissolved groundwater plume despite continued pumping and treating of the dissolved phase. In addition, very limited data indicate that carbon tetrachloride is found throughout the 66-meter-thick aquifer, but groundwater extraction only occurs near the top of the aquifer. We must resolve these two issues -- the presence of DNAPL and the vertical distribution of carbon tetrachloride -- to implement a final groundwater cleanup protection strategy.

Strontium-90 Plume – Groundwater pump-and-treat operations began in 1995 to contain and treat the strontium-90 groundwater plume. Contaminated groundwater is pumped from the unconfined aquifer approximately 100 meters inland from the Columbia River, and the treated water is re-injected up-gradient of the plume. As currently configured, this pump-and-treat operation is not efficient in removing strontium-90 from the groundwater. We are exploring new technologies and intend to deploy phytoremediation, which uses plants to absorb contaminants, and apatite barriers, which permanently bind strontium-90 to the soil, to assist in the remediation of strontium-90 contamination in this area. These two deployments will allow us to evaluate the effectiveness of these technologies as final remedies.

Key Element 5 – Integrate Site Monitoring Needs

The C3T groundwater group assigned a high priority to the need to integrate groundwater monitoring and characterization performed to satisfy the requirements of RCRA, the Washington State Hazardous Waste Management Act, CERCLA and the Atomic Energy Act (AEA). While the monitoring of wells and interpretation of data is coordinated through the Hanford Site Groundwater Monitoring Project, well drilling is currently performed independently to meet the different regulatory drivers. Coordinating the well drilling and monitoring requirements should result in an overall cost savings and an improved monitoring program.

The Department of Energy, EPA, Ecology and site contractors recently completed a Data Quality Objectives (DQO) process to integrate CERCLA and AEA monitoring well needs for the 200 West Area. This process identified 19 new wells required to monitor the performance of the pump-and-treat system and to characterize the nature and extent of existing contamination so we can make effective remediation decisions.

Under this initiative, we will install additional high-priority wells identified in the DQO process, apply results of the DQO process to revise the M-24 milestone to provide for all monitoring well drilling needs on site, and continue remote monitoring and data collection technology development.

We will also begin to consider long-term stewardship needs in planning for groundwater monitoring. This includes the need to evaluate technologies, other than wells, that are less expensive to install and require little or no maintenance over the extended period for which active monitoring is required.

Business Management

We recognize our success in accelerating the final cleanup of the Hanford Site and delivering on the commitments in this plan is largely contingent upon our ability to re-engineer our business management approaches 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 throughout the Department of Energy.

1. Assign DOE employees' responsibilities appropriate to their federal roles.
2. Align and improve contracts and contractor incentives to successfully achieve 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 infrastructure consistent with shrinking active cleanup operations.

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

4.1.7 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 concrete 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. The unique types of expertise, qualifications, and personnel levels needed to carry out the cleanup mission require the effective use of contractors. But DOE is the site owner and ultimately bears the responsibility for Hanford's successes or failures.

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 Hanford contractors.

Assistant Secretary for Environmental Management. The Assistant Secretary for Environmental Management serves as the senior government official for the Hanford cleanup. Accelerated cleanup of Hanford requires integration actions and timely decisions by a number of

DOE organizations, which the Assistant Secretary can facilitate. This position also has access to the Secretary of Energy and the authority to ensure these issues are resolved. The Assistant Secretary for Environmental Management's responsibilities under this plan are to:

- 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 our progress against cost and schedule and determine areas where we may require intervention or assistance.
- Hold the Hanford Project Managers accountable for performance.
- Chair routine meetings to assess the status of and ensure progress on 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 is consistent with these requirements.
- Set performance standards and metrics for the conduct of work.
- Partner with regulators to complete cleanup consistent with regulatory requirements and the TPA.
- Maintain a government-to-government relationship with area Tribal Nations and a productive and open relationship with stakeholders.
- Create an environment for contractors to work safely and efficiently.

- Provide project updates for and otherwise support routine meetings chaired by the Assistant Secretary for Environmental Management.

- Provide appropriate oversight of 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:

- Provide initial recommendation to 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.

- Ensure 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 ensures continued alignment with the applicable requirements, rewards outstanding performance, and takes timely corrective actions when required.

4.1.8 CONTRACT MANAGEMENT

Accelerating cleanup requires improvements in both our overall acquisition strategy and the approaches we use to manage contracts. We must improve our use of objective performance incentives, decrease subjectivity, minimize barriers to getting work done, and eliminate non-value-added requirements. In this spirit, we will endeavor to make the following key improvements:

- Improve the quality of our contract solicitation processes.

- Achieve contract clarity in the areas of 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, evaluate their risk management control processes as part of the selection process, and monitor their implementation of those processes during the performance period.

- Increase our emphasis on real risk reduction by focusing contractor fees on key end points and essential interim milestones and by minimizing the use of subjective performance

measures.

- Translate DOE orders and requirements into clear statements more easily understood by the private sector.

- Further implement clear and disciplined processes for DOE contract administration and work oversight, and incorporate any additional requirements into the contract as appropriate.

- Improve our contractor oversight, including work-monitoring practices, and ensure 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.

- Increase use of information from contractor integrated assessment to detect, measure, and analyze performance and provide constructive feedback.

- Hold contractors accountable for meeting environmental, health, and safety requirements.

We will take the steps necessary to further improve our contracting practices by revising performance measures, changing contract incentive and reward structures, and if necessary, renegotiating or terminating contracts that are not aligned with desired outcomes. We will approach 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 changing our major Hanford EM contracts to be performance-based -- resulting in outcome-oriented statements of work, performance incentives that drive better results, and reductions in contractual requirements. To complete cleanup by 2035, we must review and restructure contracts as necessary to encourage further acceleration of cleanup following the principles set forth above.

We have established a comprehensive acquisition management system to better implement performance-based contracting, streamline oversight, and develop a disciplined process to ensure our contractor requirements add value. We will aggressively deploy "best-in-class" business practices to ensure prime contracts that foster accelerated cleanup. As our enhanced business management practices and strategic initiatives take hold, we will be better prepared to evaluate the possibilities for restructuring our prime contracts to minimize interfaces, eliminate redundancies, improve integration and increase overall efficiency. Key specific contracting actions for the near future include:

- Complete review of existing major contracts, identifying changes required to align with this plan consistent with the 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.

4.1.9 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 non-value-added contractor requirements. Our goal is to ensure that we establish clear expectations for performance and quality of work, and implement and achieve them through performance-based contracts.

For example, collaborative DOE-contractor efforts have resulted in 34 DOE directives being removed from the Project Hanford Management Contract and 30 more being evaluated for 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 began 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 from approximately 650 to 400 company-level policies and procedures by March 2003 and reduce the approximately 7,500 lower-level work procedures accordingly. This will be done through a focused requirements reduction process targeting priority areas as identified by facility managers. 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 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 commercial standards rather than specific DOE requirements to the extent possible. We will identify major productivity gains, cost savings, and cost avoidance as a result of the requirements reductions.

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 CFR 830 will reduce the number of Documented Safety Analyses from 30

to 12-15 in the case of the Richland Operations Office and from 6 to 2 in the case of the Office of River Protection.

In the spirit of reducing unnecessary and non-value-added requirements, we no longer submit the Departmental Inventory Management System 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.

4.1.10 PROJECT MANAGEMENT

Over the past two years, we have continued to transition from funds management to project baseline management as a fundamental precept in the way we manage Hanford projects . 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 oversee cleanup in an effective manner. These plans start at the strategic level and progress in 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 cleanup 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 our project management activities.

As we move forward with the River Corridor contract, the operation of the WTP, and the integration of the Central Plateau, 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.

Integrated Baseline Management. Both RL and ORP have established integrated baselines for their respective work scopes and are currently managing site contractors to make 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 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 strategic initiatives and performance management plan, including the Targets of Opportunity generated by the C3T, by August 1, 2002.

- Working with our regulators to develop a top-level Hanford Site schedule by January 2003. This schedule would be at a summary (Project Baseline Summary) level; it would be based

on successful implementation of the six 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 Work Breakdown Structure, revise and integrate the current RL and ORP Hanford baselines into the single Integrated Hanford Site Baseline by January 2004. 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:

- Developing detailed work descriptions and defendable cost estimates.
- Placing the new 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 critical path activities, 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.

Government-Furnished Items and Services Management. A major element of the management system we are putting in place is the internal business practices for Hanford's EM Program on critical government-furnished items and services (GFI/S) to be completed by federal staff. Typically, GFI/S represents physical items and services provided or actions performed by the federal staff to enable the successful completion of our mission through our contractors. The Hanford process will go beyond the GFI/S, affecting contracts and including critical activities performed by the federal staff, such as regulatory management, project/program management, site-wide integration management, safety, Defense Nuclear Facilities Safety Board management, internal/external communications management, crosscutting waste and nuclear material management, and inter-agency issue management. We will manage a list of critical items and services that are provided by federal staff and coordinate critical GFI/S actions among contractors, RL, HQ, other DOE sites, regulators, other agencies, and area Tribal Nations.

Performance Monitoring and Reporting. We will update performance monitoring and reporting at several levels during the execution of our strategic initiatives and will focus on key performance data to demonstrate clear progress on accelerating cleanup. We will incorporate key acceleration 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 continue to report and review performance monthly. We will address variances and require corrective actions for performance below expectations. We will also continue to review the status of cost and schedule based on earned value, which effectively integrates work scope with schedule and cost elements, and institute corrective measures if there is cost or schedule variance. The basis of these reviews will be an approved integrated site baseline that provides firm cost and schedule projections for the acceleration initiatives, as well as logic ties with other site activities. We will also review other relevant information related to health, safety, and environmental performance and institute corrective measures if necessary. 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, issue resolution, and the status of GFI/S and will 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, whether key trending data indicate a basis for concern, and whether there are other larger site issues emerging that could impact the progress of cleanup. We will maintain a commitment log to document and track key DOE and contractor management commitments 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 this plan. 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, the 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.

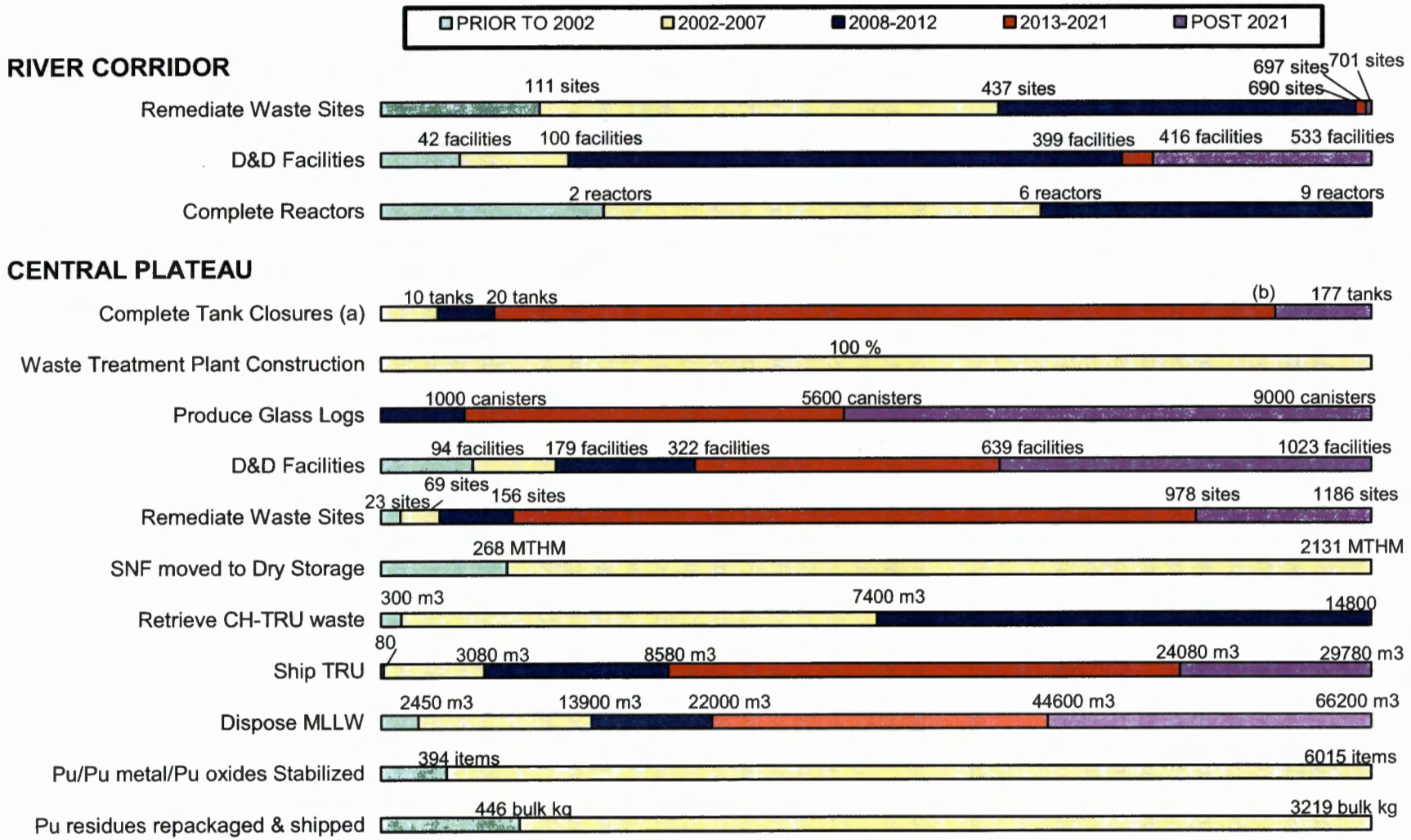
- Annual Scorecard: DOE will prepare an annual scorecard that is a one-year snapshot of key progress taken from the Hanford Site Five-Year Accelerated Cleanup Metrics. At the end of the fiscal year, DOE will evaluate progress and report results on the scorecard.

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 and we and our contractors are committed to complying with that important compliance agreement.

The key site accelerated cleanup metrics are shown on Figure 15. This figure illustrates the lifecycle endpoints and expected performance at selected points in time up to 2035. The Hanford Site lifecycle accelerated performance 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 Integrated Planning, Accountability, and Budgeting System (IPABS). We will set these metrics to meet or exceed performance required by the Tri-Party Agreement. We will align performance incentives and contract milestones with the Hanford Site accelerated performance metrics and subject them to a 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 either the contractor project manager or the DOE project manager. As candidate changes are identified, they will be considered by the appropriate DOE or contractor change control board, which will review and approve or reject change requests. Depending on threshold values or other considerations, approval by both DOE and contractor change control boards could be necessary.

Figure 15. Hanford Site Accelerated Performance Metrics



(a) The number of tanks depicted here represents a DOE goal and does not represent agreement with Washington State Department of Ecology.
(b) The Office of River Protection estimates a total of 60-140 tank closures by 2018, the graph depicts the 140 estimate
(c) The Office of River Protection estimates 5,600 canisters produced by 2018
(d) Facilities and sites remaining after 2018 support Pacific Northwest National Laboratory operations and affected waste sites

4.1.11 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 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 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 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 requires re-sequencing activities, performing work more efficiently, aligning our business practices, improving contracts and incentives, making tough decisions, and 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 due to uncertainty in our ability to optimally sequence the work and the interdependence of many of these accelerated activities. Understanding and taking actions to reduce the uncertainties on critical path activities is important to reducing schedule risk. For example, tank waste retrieval, waste processing and tank closure are clearly on the critical path to a 2035 completion of 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 the 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 use, monitoring and surveillance requirements, and groundwater protection and management actions. We recognize that NEPA reviews or CERCLA documents incorporating NEPA values are needed for the actions identified in this plan. NEPA reviews or CERCLA documents have already been done for a number of these tasks, and documents are being prepared or are planned to support the other tasks.

With the number of regulatory and other decisions that our regulators and we must make -- and the effect of these decisions on cleanup -- regulatory risk is high. We 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 end to cleanup, it is critical that we make all major decisions affecting the Central Plateau 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 closely coordinate 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 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 has provided better definition of key decisions and, therefore, we agreed with our regulators that effective communication must continue, including the partnership of the senior executives of the agencies. We will continue this effort to ensure decisions are made early and in a manner that preserves the quality and comprehensiveness 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 internal issues. While we have a sound understanding of many technologies and technical approaches needed to succeed, we also face numerous technical challenges and uncertainties, especially related to technology needed to accomplish the cleanup of the 618-10 and 618-11 burial grounds, to address our TRU cleanup, to protect our groundwater, and to safely and cost-effectively retrieve, treat, and dispose of the more 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, Tribal Nations, and others to conduct demonstrations, where appropriate, to prove the viability of alternative technologies and processes.

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

- Retrieval, treatment, packaging, and disposal of remote-handled (RH) TRU 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 waste retrieval and closure criteria, as well as criteria applicable to tank farm ancillary equipment and contaminated soils.

4.1.12 STREAMLINED ENVIRONMENT, SAFETY AND HEALTH 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 environmental mission evolves to 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. Critical to balancing accelerated cleanup and risk is performance monitoring through measurement and assessment, which means improving our systems for doing so. Elements of this improvement involve better integrating safety and operational oversight, effectively and efficiently implementing the new nuclear safety rules, streamlining requirements to align to the minimum number of documents needed to perform contract work safely, and establishing integrated performance measures that reflect total contract performance. We need to sharpen the focus on critical metrics that can be used objectively to assess performance, analyze problem areas, and benchmark successes. The entire DOE is working these initiatives from a corporate perspective.

Contractor Oversight. We have established a comprehensive contractor oversight system that includes 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 we will consider, the oversight approach, resource requirements, and resulting formal assessment and surveillance activities. This will be formally documented for each prime contract. We also provide the flexibility to reduce oversight when there is excellent contractor performance and/or minimal risk. Based on feedback processes, we will tailor the oversight process to the quality 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 apply International Standards Organization (ISO) 14001 concepts to 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 we need to implement to further support the acceleration efforts, such as a contractor self-assessment validation process. 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. As part of the River Corridor Project contractual actions, RL is developing the ISM guidance and minimum performance standards. These will be factored into the required Quality Assurance Surveillance Plan that includes the criteria and input to the conditional payment of fee.

4.1.13 FINANCIAL MANAGEMENT

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

- Reduction in the number of budget control points at Hanford will provide a breakthrough change that will remove administrative barriers that inhibit success. A reduced number of

EM control points for expense-funded activities and capital line item projects at RL and ORP beginning in fiscal year 2004 will provide more flexibility to efficiently manage the work. 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.

- Commitment by the Administration and Congress to support the multi-year funding requirements needed to accomplish this plan will provide predictability and eliminate costly re-planning 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."

4.1.14 STREAMLINING HANFORD INFRASTRUCTURE

The Hanford Site infrastructure includes buildings, roads, power, water, 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 to ensure reliability. These additional investments, along with fixed operational costs, compete for funds that could be used for cleanup. In addition, minimizing aging infrastructure provides ecological benefits.

We have various efforts underway to eliminate or reduce infrastructure liabilities and associated costs. We will aggressively reduce impacts by aligning our infrastructure with critical cleanup and operational needs to ensure that we make only essential 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, to protect the health and safety of workers, and to support on-going activities.

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

- Developing an optimized integrated infrastructure/site services baseline matched to the final integrated project execution baseline within six months after the integrated baseline is established;

- 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 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 the demands on our infrastructure and allow consolidation of resources, and look for additional opportunities as the footprint of active Hanford cleanup operations continues to shrink.

Specific initiatives are underway to:

- Move personnel offsite to decrease associated impacts on the Central Plateau and lower the cost profile (a C3T initiative);

- Improve the operating model via implementation of the "city manager" concept to support fiscal management at a sitewide level;

- Deactivate, remove, or reroute infrastructure systems (such as water, power, and telecommunications lines) as part of the U Plant regional closure actions specified in Strategic Initiative 5.

- Abandon, repair, or replace leaky water lines and septic systems located near waste sites as detailed in Strategic Initiative 6.

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

- Shrink the Hanford Site footprint by transferring administrative control of Hanford lands to other agencies as the Environmental Management cleanup mission is completed.

The most visible change will be the movement of personnel off the Hanford Site. Only personnel with a demonstrated need should be located onsite. This will reduce to minimum operational needs both utility coverage and waste volumes and drop the amount of water used and discarded on the Plateau, which will help protect groundwater (septic system discharges may drive soil contaminants into the groundwater). 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 shifting of funds to accelerated cleanup activities.

The city manager concept is similar to a city public works department where centralized services are provided by a single entity. By applying this concept, we are producing both quantifiable and tangible savings, which will increase in succeeding phases of implementation. The city manager, now Fluor Hanford, Inc., will focus the needs of customers to optimize the overall Hanford Site systems and provide improved fiscal stability to allow us to more accurately estimate cost profiles for needed services.

5.0 Key Planning Assumptions

In this plan, we outline six strategic initiatives that will put us on the path to complete EM cleanup by 2035 or sooner. As we developed them, we had to make assumptions about regulatory and other decisions, costs, schedules, the likelihood of success, etc. In Table 4, we highlight some of the key assumptions we believe are critical to the success of this plan. Should an assumption prove incorrect, it is likely to affect components of this plan. This table sets forth the assumptions and suggests which initiatives might be affected by them.

Table 4. Key Planning Assumptions for Acceleration of EM Cleanup Mission

Key Planning Assumptions	IMPACTED INITIATIVES					
	#1	#2	#3	#4	#5	#6
Contract types and incentives adequately incentivize contractors to achieve the target budget profile and the 2035 cleanup objectives.	X	X	X	X	X	X
Coordination of regulations (e.g., RCRA and CERCLA) will be possible to achieve efficiencies and optimization of actions (e.g., expanded use of ERDF for Hanford waste).	X	X	X	X	X	X
Adequate and predictable funding levels are maintained.	X	X	X	X	X	X
The TPA will be maintained as the governing document for Hanford's cleanup.	X	X	X	X	X	X
At the completion of the Environmental Management cleanup mission, the long-term stewardship actions and ongoing missions will be the responsibility of the federal government, but will not be funded by EM.	X	X	X	X	X	X
Accelerating cleanup will not compromise the quality of cleanup or public participation processes required by the TPA.	X	X	X	X	X	X
The nature and extent of contamination assumed in estimating the extent of remedial actions (e.g., for the River Corridor burial grounds) will not be substantially different from the baseline.	X			X	X	X
Pending update of the Reactor EIS, the reactor cocoons will remain in place through 2035.	X					
The remedial action objectives identified in the interim records of decision will be shown to be adequate, resulting in substantive remediation so that final RODs can be issued without further characterization and remediation.	X				X	X
On-site disposition paths will exist on the schedule required for low-activity waste, low-level waste, mixed low-level waste, and all other required waste streams.	X	X		X	X	X
The Central Plateau risk framework is found to be acceptable and is universally applied to ensure consistent decision-making on the Central Plateau.		X		X	X	X
Tank waste retrieval and surface barrier technology will prove adequate for tank farm closure, however, closure of single-shell tank farms will be in compliance with the Hazardous Waste Management Act, the TPA, and the Single-Shell Tank System Closure EIS ROD.		X				
Supplemental technologies for immobilization of low-activity waste will prove effective and deployment will be authorized.		X				
The Waste Treatment Plant will start up at full capacity in 2010.		X				
The tank retrieval and closure demonstrations will support the process to allow closure of all tanks by 2033.		X				
Off-site disposition paths will exist on the schedule required for plutonium, transuranic waste, high-level waste canisters, spent nuclear fuel, and cesium/strontium capsules (in a non-vitrified waste form).		X	X	X		
Scoping, risk, and environmental documentation will determine the extent to which some waste containing TRU or hazardous constituents must be retrieved or may be disposed in place. Final decisions will be based on 40 CFR 191, NEPA and/or CERCLA analyses. The current assumption is that we will retrieve only post-1970 TRU.				X	X	X
The Central Plateau presumptive remedies used in developing long-range estimates are not substantially different from the remedies selected.				X	X	X

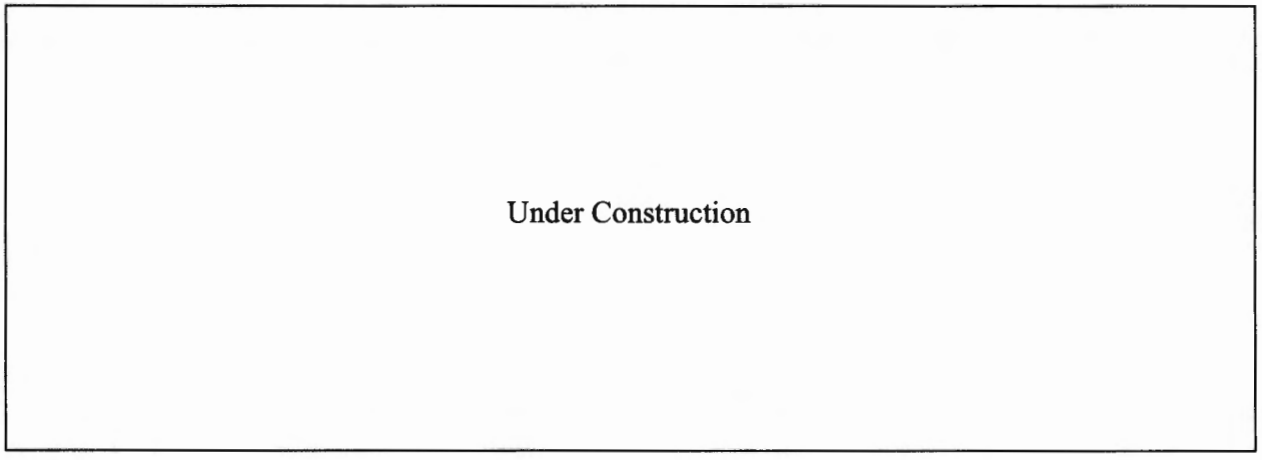
6.0 Funding

To implement this plan and realize significantly lower lifecycle costs and schedules, we will need an increase in near-term annual funding. The strategic initiatives outlined in this plan and for which we are seeking additional funding are key to successful, early completion of cleanup and a dramatic reduction in risk to human health, the environment, and our workers. Specifically, developing supplemental tank waste treatment technologies and accelerating tank waste treatment and closure completion is critical to finishing site cleanup by 2035 and eliminating the need for a second tank waste treatment plant, resulting in potential lifecycle savings of up to $20 billion. Accelerating cleanup of high-mortgage facilities and projects, such as cleanup of the Plutonium Finishing Plant, removal of spent nuclear fuel, and stabilization of cesium and strontium capsules, frees up funding for other cleanup projects and helps us complete cleanup by 2035. These three projects alone currently cost over $230 million per year. Accelerating completion of the River Corridor project to 2012 will reduce our lifecycle mortgage and landlord costs by more than $1 billion.

Based on comparison of the current Hanford lifecycle cost estimate (completing cleanup in 2070) to a preliminary estimate of the costs of implementing this plan and completing cleanup by 2035, we can achieve a savings of $30 - $40 billion in lifecycle costs. We can realize much of this savings 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 until 2070.

In addition to the Strategic Initiatives, the improvements in our business management practices defined in this plan are crucial to Hanford achieving an accelerated, quality cleanup. Through the execution of this plan, we are committed to drive improved performance-based contracting approaches (e.g., incentive structures that drive real performance improvements); improve work plans and resource alignment to perform work (e.g., challenge existing assumptions and resource estimates); apply innovative technologies for retrieval, treatment, immobilization, disposal, groundwater protection, and closure; and work with our regulators to apply effective regulatory processes. The target funding profile in Figure 16 graphically depicts the magnitude of the acceleration and cost saving potential of this plan.

Figure 16. Funding Profiles for Current Baseline and Targeted Budget for Acceleration of Cleanup



7.0 Conclusion

This plan provides a significant improvement in the way we get cleanup done at Hanford. It dramatically reduces risks to our workers, the public and the environment, substantially reduces our lifecycle costs, significantly 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 three agencies outlining the commitment to continue our work together to find mutually agreeable solutions to Hanford's 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 many 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 toughest problems. 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 cleanup can and must change. Completion in 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

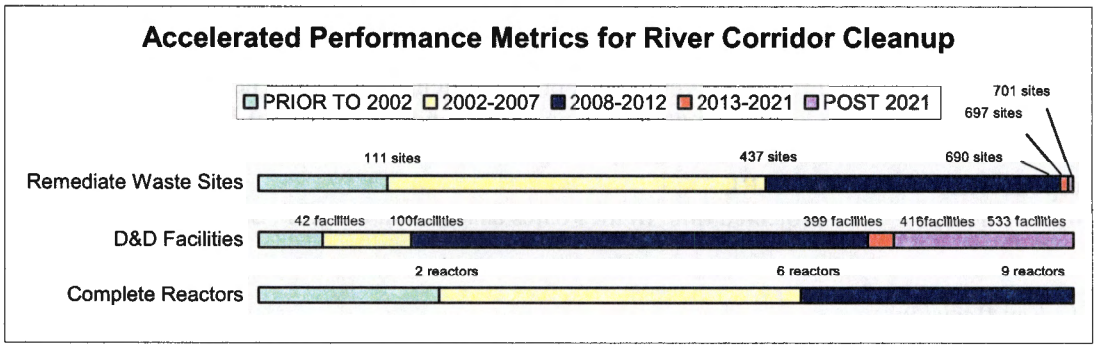
This Appendix provides a preliminary list of milestones to implement the new strategy described in the *Hanford Performance Management Plan for the Accelerated Cleanup of the Hanford Site.* The milestones in the Plan will be better defined as the strategy is implemented. Detailed work plans are now being developed. As part of the work plan development, continued coordination within the Department and with the Hanford Site regulators will be required to address programmatic, regulatory, technical, contractual, and financial uncertainties.

One important element of this Plan is a strong commitment to improve the strategy and Hanford Site performance during Plan execution. The two Federal offices at the Hanford Site will work together to drive improved performance-based contracting approaches (e.g., incentive structures that drive real performance improvements); improve work plans and resource alignment to perform work (e.g., challenge existing assumptions and resource estimates); apply innovative technologies for retrieval , treatment, immobilization, disposal, groundwater protection, and closure; and work with our regulators to apply effective regulatory processes.

Included in this appendix are the internal performance management milestones, Government Furnished Services/Items (GFI/S) 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. These are projected dates that will be formally established through appropriate regulatory processes.

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: Accelerate 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 Interface Control Document (ICD) for management of the interface between the River Corridor Project and the Groundwater Protection Project.
Responsible:	DOE-RL
Commitment:	Complete ICD by 01/31/03
1.Ib Action:	Complete packaging and removal of five 324 Building spent nuclear fuel assembly shipments and transfer to the Hanford 200 Area.
Responsible:	River Corridor Contractor
Commitment:	Complete packing and removal by 06/30/03
1.Ic Action:	Complete Interim Safe Storage of six former production reactors.
Responsible:	River Corridor Contractor
Commitment:	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.Id 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.Ie Action:	Complete deactivation and demolition of the 357 remaining 100 and 300 Area excess facilities.
Responsible:	DOE-RL and River Corridor Contractor
Commitment:	Complete deactivation and demolition by 2012
1.If Action:	Complete cleanup of the 100 and 300 Area waste sites and burial grounds. There are 379 waste sites and 50 burial grounds to be completed after FY 2002.
Responsible:	DOE-RL and River Corridor Contractor
Commitment:	Complete waste site remediation by 2012

II. GFI/S:

1.IIa Action:	Provide Government-Furnished Items/Services in accordance with River Corridor Contract Request for Proposals (RFP) Solicitation No. DE-RP06-02RL14300, Section C.
Responsible:	DOE-RL
Commitment:	Projected time frames/dates as stated in the RFP, Section C.

III. Key Decisions:

1.IIIa Action:	Obtain Critical Decision 1 (approve Preliminary Baseline/Proposed Work Plan) approval.
Responsible:	DOE-RL, River Corridor Project Manager (AMRC)
Commitment:	09/30/02
1.IIIb Action:	Obtain Critical Decision 2/3 (approve Performance Baseline) approval.
Responsible:	DOE-RL, River Corridor Project Manager (AMRC)
Commitment:	15 months after contract award

IV. Uncertainties/Assumptions:

- Waste generated will have an acceptable treatment and disposal pathway (burial ground unknowns will be managed).
- The remedial action objectives identified in the Interim RODs will be shown to be adequate, resulting in substantive remediation so that final RODs can be issued without further remediation.
- A Long-Term Stewardship (LTS) program will be available to execute required LTS requirements.
- The 300-Area facilities will be made available for demolition on schedule.
- Pending update of the Reactor EIS the Reactor Cocoons will remain in place thru 2035 (there are a small number of adjacent waste sites that will be addressed as part of the final reactor disposition).
- The nature and extent of contamination assumed in estimating the extent of remedial actions (e.g. for the River Corridor burial grounds) will not be substantially different from the baseline.

Strategic Initiative 2: Accelerate Tank Waste Treatment Completion by 20 Years and Save up to $20 Billion

2.1 Accelerate Tank Waste Retrieval

I. Milestones:

Milestones leading to accelerated retrieval of waste (Additional milestones will be defined subject to DOE approval of individual facility performance enhancements):

2.1.Ia Action: Develop ORP Target Baseline, including DST accelerated retrieval sequence and Single Shell Tank Retrieval and Closure sequence reflecting the initiatives of the *Performance Management Plan for the Accelerated Cleanup of the Hanford Site.*
Responsible: CH2M HILL Hanford Group
Commitment: 09/30/02

2.1.Ib Action: Complete construction and ready to deliver first HLW feed batch to WTP.
Responsible: CH2M HILL Hanford Group/Future Tank Farm Operating Contractor
Commitment: 03/31/07, TPA M-47-02
CHG target dates:

- 03/24/04 (Complete Waste Transfer System Construction to WTP)
- 03/31/04 (Complete first HLW tank construction)
- 09/30/06 (Complete Readiness Assessment)

2.1.Ic Action: Complete construction and ready to deliver first LAW feed batch to WTP.
Responsible: CH2M HILL Hanford Group
Commitment: 04/30/06, TPA M-47-05A
CHG target dates:

- 11/18/03 (Complete AP-101 pump replacement)
- 09/30/05 (Complete Readiness Assessment)

2.1.Id Action: Complete Full-Scale Saltcake Waste Retrieval Technology Demonstration at Tank S-112 (all physical systems including LDMM provisions).
Responsible: CH2M HILL Hanford Group
Commitment: 09/30/05, TPA (M-45-03C).
CHG target dates:

- 07/31/04 (Complete waste retrieval construction)
- 07/31/05 (Complete full-scale waste retrieval demonstration)

2.1.Ie Action: Complete Initial Waste Retrieval from SST S-102.
Responsible: CH2M HILL Hanford Group
Commitment: 09/30/06, TPA (M-45-05A)
CHG target dates:

- 09/30/05 (Complete project construction)
- 07/31/06 (Complete initial waste retrieval)

2.1.If Action: Complete C-104 Sludge/Hard Heel, Confined Sluicing and Robotic Technologies, Waste Retrieval Demonstration Construction (all physical systems including LDMM provisions).
Responsible: CH2M HILL Hanford Group
Commitment: 09/30/06, TPA (M45-03I)
CHG Target date:

- 07/30/06 (Complete construction)

2.1.Ig Action: Implement DST tank space savings initiatives.
Responsible: CH2M HILL Hanford Group
Commitment: 2005 (Initiatives will be implemented in a time frame that makes DST space available to support the SST retrieval and closure commitments)

II. GFI/S:

2.1.IIa Action: DOE approval to implement DST retrieval project acceleration in FY03.
Responsible: DOE-ORP
Commitment: 08/15/02

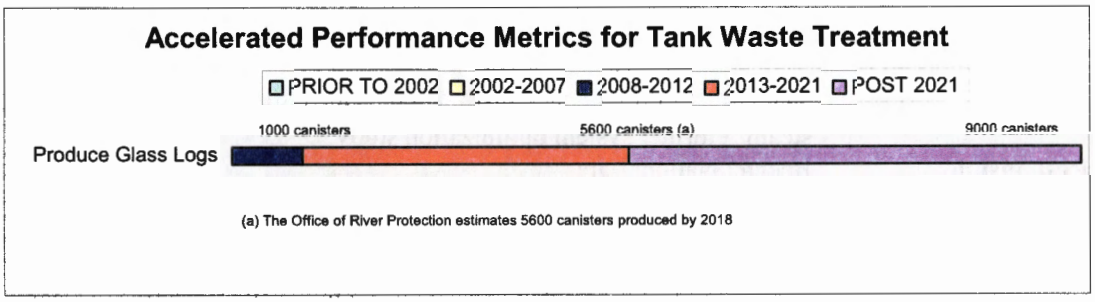
2.1.IIb Action: Determine SST retrieval technologies.
Responsible: DOE-ORP
Commitment: 12/31/07

III. Key Decisions:

2.1.IIIa Action: Approval to operate retrieval and transfer systems to provide waste feed to WTP.
Responsible: DOE-ORP
Commitment: 12/31/07

IV. Uncertainties/Assumptions:

- Sufficient DST space initiatives can be implemented per RPP-7702, Tank Space Options Report, to support the accelerated SST retrieval and closure commitments.
- Acceleration of capital projects for initial DST retrieval systems will be sufficient for waste feed delivery to the enhanced WTP facility defined in this PMP.
- Capital funding will be available in FY03 to support the acceleration of the DST Retrieval projects.



2.2 Complete Tank Waste Treatment by 2028

2.2.1 Waste Treatment in WTP

I. Milestones:

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

2.2.1.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:	10/31/02
2.2.1.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:	06/30/03
2.2.1.Ic Action:	Award contract for laboratory scale testing of the application of steam reformer technology to Hanford tank waste.
Responsible:	Bechtel National, Inc.
Commitment:	10/31/02 (contingent on successful outcome of 2.2.1.Ia)
2.2.1.Id 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:	02/28/03 (contingent on successful outcome of 2.2.1.Ia)
2.2.1.IeAction:	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: 06/30/03[21] (contingent on successful outcome of 2.2.1.Ia)

2.2.1.If Action: Initiate design changes for selected WTP enhancements and start implementing the selected enhancements to the WTP relative to steam reformer technology and HLW capacity.

Responsible: Bechtel National, Inc.

Commitment: 08/31/03[1] (contingent on successful outcome of 2.2.1.If)

Milestones related to WTP construction:

2.2.1.Ig Action: Start WTP construction. The TPA defines this as being completed with the first placement of structural concrete at one of the principal WTP facilities.

Responsible: Bechtel National, Inc.

Commitment: 12/31/02, TPA M-62-06

BNI target[22] dates:

- Completed 7/9/02 (Start LAW facility construction)
- Completed 7/9/02 (Start HLW facility construction)
- 11/06/02 (Start pretreatment facility construction)

2.2.1.Ih Action: Complete WTP construction.

Responsible: Bechtel National, Inc.

Commitment: 11/30/07 (WTP Contract)

BNI target dates:

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

Milestones related to WTP commissioning and operations:

2.2.1.Ii Action: ILAW disposal facility ready to receive ILAW.

Responsible: Future Tank Farm Operating Contractor

Commitment: 12/31/07

2.2.1.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)

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[21] Date will be definitized in Target Baseline.

[22] 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 increase performance fees.

2.2.1.Ik Action: IHLW interim storage facility ready to receive IHLW.
Responsible: Future Tank Farm Operating Contractor
Commitment: 3/31/08

2.2.1.Il Action: Complete WTP hot commissioning, demonstrating the WTP is fully operational.
Responsible: Bechtel National, Inc.
Commitment: 01/31/10
BNI target dates:

- 02/10/09 (Complete LAW facility hot commissioning)
- 06/27/09 (Complete HLW facility hot commissioning)
- 01/09/09 (Complete pretreatment facility hot commissioning)

2.2.1.Im Action: Reach full WTP operating capacity, achieving target throughput levels on a sustaining basis that meets or beats accelerated processing rates.
Responsible: WTP Operating Contractor
Commitment: 01/31/10

2.2.1.In Action: Initiate shipment of HLW canisters to the national repository.
Responsible: Future Tank Farm Operating Contractor
Commitment: 9/30/12

2.2.1.Io 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: WTP Operating Contractor
Commitment: 03/31/14

2.2.1.IpAction: Complete treatment of HLW and LAW using the WTP and alternative technologies.
Responsible: WTP Operating Contractor
Commitment: 12/31/28

II. GFI/S:

2.2.1.IIa Action: DOE approval to conduct steam reformer technology waste form test.
Responsible: DOE-ORP
Commitment: Completed

2.2.1.IIb Action: Commit EM-50 or incremental additional site funding for S&T initiatives required to increase HLW loading in borosilicate glass.
Responsible: DOE-EM
Commitment: 09/30/02

2.2.1.IIc Action: DOE evaluation of waste form test and authorization to conduct bench scale steam reformer technology test.
Responsible: DOE-ORP
Commitment: 10/31/02

2.2.1.IId Action: DOE approval to conduct steam reformer technology radioactive testing.
Responsible: DOE-ORP

Commitment: 02/28/03

2.2.1.IIe Action: Issue NEPA/SEPA documentation for steam reformer technology application to WTP scope.
Responsible: DOE-ORP/Ecology
Commitment: 7/31/03

2.2.1.IIf Action: Determine ILAW disposal criteria.
Responsible: DOE-ORP
Commitment: 3/31/03

2.2.1.IIg Action: WTP Permit modifications and Safety Analysis Report approval for steam reformer technology.
Responsible: DOE-ORP
Commitment: 12/31/06

2.2.1.IIhAction: To minimize the requirement for building IHLW interim storage capacity, obtain commitment to initiate shipment of HLW canisters to the national repository in 2012 at a rate that equals or exceeds the rate at which IHLW canisters are produced by the WTP.
Responsible: DOE-HQ EM-1
Commitment: 7/31/11

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

2.2.1.II.j Action: Obtain approval from Ecology for RCRA Delisting of vitrified HLW.
Responsible: DOE-ORP
Commitment: 12/31/07

2.2.1.IIk Action: Approve WTP operations at target capacity throughput.
Responsible: DOE-ORP
Commitment: 01/31/10

2.2.1.III Action: Verification that all WTP contract requirements have been completed (includes certification by future operations contractor that acceptable turnover of the facility has occurred).
Responsible: DOE-ORP
Commitment: 7/31/11

III. Key Decisions:

2.2.1.IIIa Action: DOE authorization for full WTP construction (CD-3c).
Responsible: DOE-HQ Deputy Secretary of Energy (S-2)
Commitment: 9/30/02

2.2.1.IIIb 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:	09/30/03
2.2.1.IIIc Action:	DOE evaluation of increased initial LAW capacity and authorization to implement. This action will expand the WTP scope to enable startup with full LAW processing capacity (including use of supplemental technologies) to achieve 2200 Na units/year of LAW treatment.
Responsible:	DOE-HQ EM-1 /S-2 (depending on magnitude of change request)
Commitment:	09/30/03
2.2.1.IIId 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:	07/31/03[23]
2.2.1IIIe Action:	DOE approval to operate ILAW disposal facility.
Responsible:	DOE-ORP
Commitment:	12/31/07
2.2.1.IIIf Action:	Decision to initiate hot commissioning (i.e., radioactive operation) of the WTP.
Responsible:	DOE-HQ EM-1
Commitment:	12/31/07
2.2.1.IIIg Action:	DOE approval to operate IHLW interim storage facility.
Responsible:	DOE-ORP
Commitment:	3/31/08

IV. Uncertainties/Assumptions:

- Readiness and capability of the supplemental 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
- Existing NEPA documentation is adequate for field demonstration of supplemental technologies.

[23] Contingent on successful demonstration of steam reformer technology.

2.2.2 Supplemental Technologies

I. Milestones:

2.2.2.Ia Action: Complete Hot Lab Scale Testing of Supplemental Immobilization by Grout.
Responsible: CH2M HILL Hanford Group
Commitment: 08/31/03

2.2.2.Ib Action: Complete Hot Lab Scale Testing of Supplemental Immobilization by Bulk Vitrification.
Responsible: CH2M HILL Hanford Group
Commitment: 08/31/03

2.2.2.Ic Action: Complete Hot Lab Scale Testing of Supplemental Pretreatment by Sulfate Removal.
Responsible: CH2M HILL Hanford Group
Commitment: 08/31/03

2.2.2.Id Action: Complete Hot Lab-Scale Testing of Supplemental Pretreatment for Cs^{24}.
Responsible: CH2M HILL Hanford Group
Commitment: 08/31/03

2.2.2.Ie Action: Complete Hot Testing of Supplemental Pretreatment for Selective Dissolution.
Responsible: CH2M HILL Hanford Group
Commitment: 08/31/03

2.2.2.If Action: Complete Cold Pilot Demonstrations of technologies determined to meet requirements (technologies to be determined by down selection based on results from Hot Testing).
Responsible: CH2M HILL Hanford Group
Commitment: 08/31/04

2.2.2.Ig Action: Complete ORR for Start-Up of In-Farm Hot Demonstration Operations.
Responsible: CH2M HILL Hanford Group
Commitment: 07/31/05

2.2.2.Ih Action: Full-scale Operations of supplemental treatment and immobilization technologies at 50% capacity.
Responsible: Future Tank Farm Operating Contractor
Commitment: 08/31/08

2.2.2.Ii Action: Full-scale operations of supplemental treatment and immobilization technologies at 100% capacity.
Responsible: Future Tank Farm Operating Contractor
Commitment: 08/31/10

[24] Tc removal will be accomplished using the WTP techniques.

II. GFI/S:

2.2.2.IIa Action:	Approve Technology Down-Select.
Responsible:	DOE-ORP
Commitment:	07/31/02
2.2.2.IIb Action:	Authorization to issue RFP for technology vendors prior to funding authorization.
Responsible:	DOE-ORP
Commitment:	07/31/02
2.2.2.IIc Action:	Approve Plans (include in baseline) for Hot Testing and accelerated Cold Pilot Plant Design.
Responsible:	DOE-ORP
Commitment:	08/31/02
2.2.2.IId Action:	Approval of the Supplemental Technology Decision Strategy document.
Responsible:	DOE-ORP
Commitment:	09/27/02
2.2.2.IIe Action:	Commit EM-50 or incremental additional site funding for S&T initiatives that will provide alternatives to the current LAW baseline (e.g., development of technologies that will enable a portion of the LAW to be alternatively treated to a waste form that can meet disposal requirements).
Responsible:	DOE-EM
Commitment:	09/30/02
2.2.2.IIf Action:	Approve further down selection, and authorized procurement(s) to support Cold Pilot Demonstration(s).
Responsible:	DOE-ORP
Commitment:	08/31/03
2.2.2.IIg Action:	Approve Plans for Hot In Field Demonstration Deployment(s).
Responsible:	DOE-ORP
Commitment:	08/31/04
2.2.2.IIh Action:	DOE approval of phased CD-3 (Approve Start of Construction) process for approved supplemental technology demonstration.
Responsible:	DOE-ORP
Commitment:	11/30/04
2.2.2.IIiAction:	CD-4 (Approve Start of Operations) for approved supplemental technology.
Responsible:	DOE-ORP
Commitment:	08/31/08

III. Key Decisions:

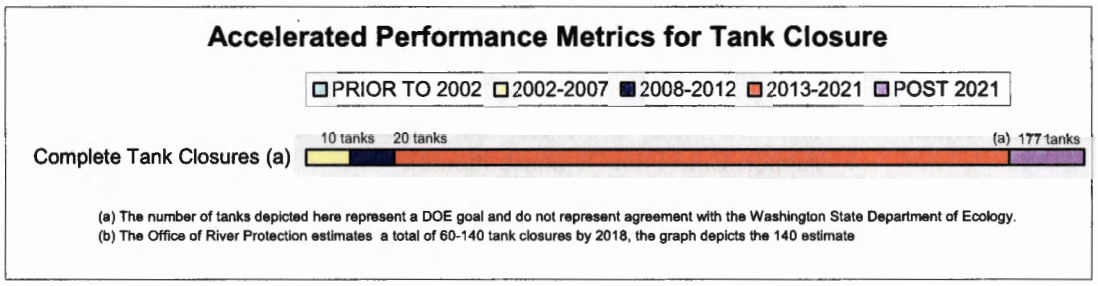
2.2.2.IIIa: Action: Approve ROD for operation of supplemental treatment and immobilization technologies (Tank Closure and Mission Completion EIS).
Responsible: DOE-HQ
Commitment: 09/30/06

IV. Uncertainties/Assumptions:

- The performance of the supplemental technologies, when used in combination with the WTP, will allow us to complete treatment by 2028.
- Permitting and NEPA coverage for supplemental technologies can occur on a schedule that supports completion of treatment by 2028.

2.3 Accelerate Tank Waste Closure

DOE and Ecology recognize that these initial demonstrations are for the purposes of developing closure processes and initiating SST waste retrieval and closure activities. As such, they will not, in and of themselves, constitute final closure of the tank system in that they will not remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as dangerous waste.



I. Milestones:

2.3.Ia Action: Submit Draft Framework SST Closure Plan, Retrieval and Closure demonstration project plans, and associated permit modifications for approval pursuant to the HWMA.
Responsible: DOE-ORP

7.1.1 COMMITMENT: 11/30/02

2.3.Ib Action: Complete engineering design for C-106 retrieval activities.
Responsible: CH2M HILL Hanford Group
Commitment: 04/30/03

2.3.Ic Action: Complete interim stabilization of SSTs.
Responsible: CH2M Hill Hanford Group

Commitment:	09/30/03
2.3.IdAction:	Complete C-106 tank preparation and equipment installation.
Responsible:	CH2M HILL Hanford Group
Commitment:	09/30/03
2.3.IeAction:	Complete C-106 Waste Retrieval and Closure (first tank). This phase of the initiative will remove the remaining liquids and residual sludges from C-106 and proceed to closure of the C-106 Tank using the TPA Appendix H process, if necessary, to obtain final condition acceptance by DOE and the regulators.
Responsible:	CH2M HILL Hanford Group
Commitment:	04/30/04
2.3.If Action:	Complete C-106 ancillary equipment isolation.
Responsible:	CH2M HILL Hanford Group
Commitment:	05/31/04
2.3.Ig Action:	Develop a closure and mission completion EIS for the Tank Farm Program.
Responsible:	DOE-ORP
Commitment:	01/31/06
2.3.Ih Action:	Complete S-112 closure (1 tank) following planned retrieval actions. This phase of the initiative will implement ISMS feedback and lessons learned from the prior retrieval and closure demonstrations into an approved S-112 Closure Plan for the permanent closure of Tank S-112.
Responsible:	Future Tank Farm Operating Contractor
Commitment:	10/30/06
2.3.Ii Action:	Complete S-102 closure (1 tank) following planned retrieval actions. This phase of the initiative will implement ISMS feedback and lessons learned from the prior retrievals and closure demonstration in an approved S-102 Closure Plan for the permanent closure of Tank S-102.
Responsible:	Future Tank Farm Operating Contractor
Commitment:	12/31/06
2.3.Ij Action:	Complete C-104 closure (1 tank) following planned retrieval actions. This phase of the initiative will implement ISMS feedback and lessons learned from the prior retrieval and closure demonstrations into an approved C-104 Closure Plan for the permanent closure of Tank C-104.
Responsible:	Future Tank Farm Operating Contractor
Commitment:	12/30/07
2.3.Ik Action:	Complete retrieval and closure of three high-risk waste tanks to be determined through M-45-00C negotiations. This phase of the initiative will implement corresponding tank Closure Plan(s) for the permanent closure of the selected tanks.
Responsible:	Future Tank Farm Operating Contractor
Commitment:	Date subject to M-45 negotiations.

2.3.II Action: Complete initial tank farm retrieval and closure. Retrieval will be to the extent necessary to accomplish risk reduction goals. This phase of the initiative will implement associated approved tank farm Closure Plan and the Closure and Mission Completion EIS ROD.

Responsible: Future Tank Farm Operating Contractor

Commitment: 09/30/10

II. GFI/S:

2.3.IIa Action: Commit EM-50 or incremental additional site funding for S&T initiatives required to support development of approaches for detection and prevention of surface water infiltration into and movement of waste that has leaked from the Hanford tanks.

Responsible: DOE-EM

Commitment: 09/30/02

2.3.IIb Action: Commit EM-50 or incremental additional site funding for S&T initiatives required to provide technical assistance, data and analyses, and alternative tools and capabilities required to define acceptable tank system end-states for the SSTs at Hanford.

Responsible: DOE-EM

Commitment: 09/30/02

2.3.IIc Action: Determination of whether or not additional NEPA/SEPA documentation is required for initial closure demonstration activities.

Responsible: DOE-ORP/Ecology

Commitment: 09/30/02

2.3.IId Action: Authorization to execute initial SST waste retrieval and closure demonstrations.

Responsible: DOE-ORP/Ecology

Commitment: 01/31/03

2.3.IIe Action: Issue NEPA/SEPA Record of Decision (ROD) for tank closure and mission completion activities.

Responsible: DOE-HQ/Ecology

Commitment: 09/30/06

III. Key Decisions:

2.3.IIIa Action: Determination from Ecology that retrieval and closure demonstrations can occur under HWMA Hazardous Waste Facility Permit. This interim action will be documented through a supplement to the Closure Work Plan.

Responsible: DOE-ORP/Ecology

Commitment: 11/30/02

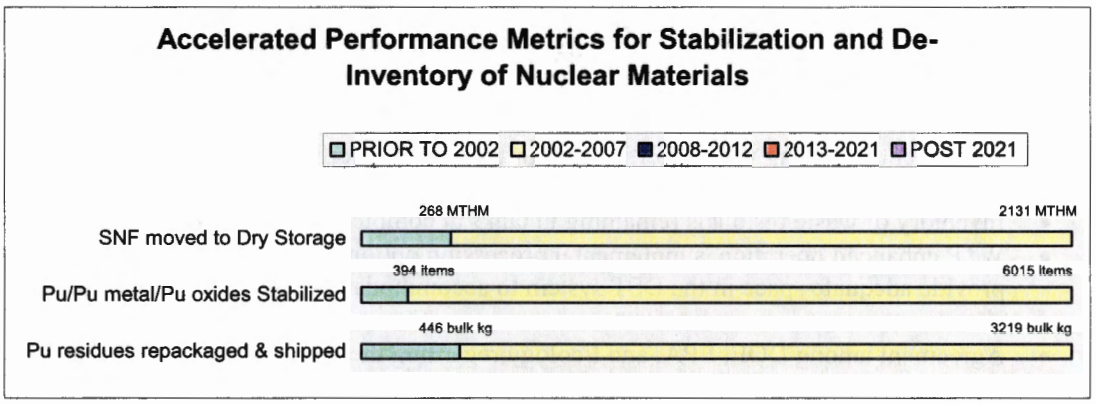
2.3.IIIb Action: Determine that RCRA closures are equivalent to CERCLA closures under DOE O 435.1 in order to accelerate approval of performance assessments, disposal authorizations, and closure plans required by the Order.

Responsible: DOE HQ EM-1
Commitment: 11/30/02

IV. Uncertainties/Assumptions:

- Proposed retrieval and closure demonstrations are "first of a kind" and are dependent on the development of a methodology utilizing the existing TPA process, including Appendix H. This approach has not been demonstrated before at the Hanford Site.
- Ability for retrieval demonstrations to remove adequate waste to allow closure per TPA.
- Agreement regarding what specific tank- or tank farm-specific risk assessments are required to support regulatory decisions under DOE O 435.1, the HWMA, and NEPA.
- Inventory of waste residuals remaining in tanks at completion of TPA process.
- WTP enhanced operation, supplemental processing options, and DST 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 groundwater models that will be used for assessment of short-term and long-term risks to human health and the environment.
- Ecology approval for demonstrations is required and will be obtained via submittal and approval of a modification to the site-wide permit which will include the tank farm closure framework and tank specific closure plans. Ecology will accelerate review cycle and approval process.
- DOE approval for demonstrations will be obtained via a WIR determination process in accordance with DOE O 435.1.
- Timely NRC/Consultation will occur relative to WIR determinations
- Timely agreement will be reached on the selection of tanks.
- Air permits received in time to support project schedules.
- Closure demonstration activities are limited to the tank and its contents.
- NEPA and SEPA (RCW 43.21c) coverage for the demonstrations will be documented within a Supplemental Analysis (SA) on an environmental assessment (EA).
- Data Quality Objectives (DQO) will be developed to support the accelerated closure activities.

8.0 STRATEGIC INITIATIVE 3: ACCELERATE STABILIZATION AND DEINVENTORY OF NUCLEAR MATERIALS



8.1.1

3.1 Spent Nuclear Fuel

I. Milestones:

3.1.Ia Action: Initiate removal of K-East Basin spent nuclear fuel.
Responsible: Fluor Hanford
Commitment: 11/30/02

3.1.Ib Action: Complete removal of all K Basin spent nuclear fuel.
Responsible: Fluor Hanford
Commitment: 07/31/04

3.1.Ic Action: Complete KE Basin water removal.
Responsible: Fluor Hanford
Commitment: 09/30/05

3.1.Id Action: Complete removal of spent nuclear fuel, sludge, debris, and water from K Basins.
Responsible: Fluor Hanford
Commitment: 09/30/06 (10 months before TPA milestone date of 7/31/07)

3.1.Ie Action: Initiate shipment of K Basin spent nuclear fuel to a national geologic repository.
Responsible: DOE-RL
Commitment: 01/01/18

II. GFI/S:

3.1.IIa Action:	Complete DOE Operational Readiness Review for the Fuel Transfer System.
Responsible:	DOE-RL
Commitment:	11/30/02
3.1.IIb Action:	Approve K Basin Authorization Basis revision to support Sludge Water System operation.
Responsible:	DOE-RL
Commitment:	11/30/02
3.1.IIc Action:	Complete DOE Operational Readiness Review the Sludge Water System.
Responsible:	DOE-RL
Commitment:	12/31/02
3.1.IId Action:	Approve Safety Analysis Report for Packaging for shipment of sludge from K Basins to T Plant.
Responsible:	DOE-RL
Commitment:	12/31/02
3.1.IIe Action:	DOE-RL working in conjunction with the 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:	DOE-RL
Commitment:	01/31/03
3.1.IIf Action:	Approve Authorization Basis revision to support processing of K Basin scrap.
Responsible:	DOE-RL
Commitment:	09/30/03

III. Key Decisions:

No key decisions have been identified for this acceleration initiative.

IV. Uncertainties/Assumptions:

- The contractor must perform at the highest level to achieve the accelerated schedule.

3.2 Special Nuclear Material (Plutonium)

I. Milestones:

3.2.Ia Action: Provide FY 2002 Incremental Funding ($3M).
Responsible: DOE-RL and Fluor Hanford
Commitment: Completed on 05/31/02

3.2.Ib Action: Complete alternative onsite storage preliminary design report for SNM storage.
Responsible: Fluor Hanford
Commitment: 03/30/03

3.2.Ic Action: Begin routine shipments of SNM to Savannah River Site if possible.
Responsible: Fluor Hanford
Commitment: 06/30/03

3.2.Id Action: Submit to RL a plan and schedule for protected area and safeguard reduction.
Responsible: Fluor Hanford
Commitment: 09/30/03

3.2.Ie Action: Complete stabilization and packaging of plutonium bearing materials in accordance with schedules in Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 2000-1.
Responsible: Fluor Hanford
Commitment: 05/31/04

3.2.If Action: Complete deinventory of PFP 234-5Z and 2736-ZB vaults.
Responsible: Fluor Hanford
Commitment: 09/30/05

3.2.Ig Action: Complete dismantlement of 232-Z incinerator facility.
Responsible: Fluor Hanford
Commitment: 09/30/05

3.2.Ih Action: Complete legacy holdup removal and packaging/disposition of materials/wastes.
Responsible: Fluor Hanford
Commitment: 09/30/06

3.2.Ii Action: Complete protected area reduction and reduce safeguards.
Responsible: Fluor Hanford
Commitment: 09/30/06

3.2.Ij Action: Complete 241-Z process equipment removal.
Responsible: Central Plateau Contractor
Commitment: 09/30/07

3.2.Ik Action: Complete deactivation of 291-Z Exhaust Fan Structure.
Responsible: Central Plateau Contractor
Commitment: 09/30/08

3.2Il Action: Complete PFP deactivation and dismantlement of all PFP facilities in accordance with end point criteria and action memoranda, and disposition of all material/waste.
Responsible: Central Plateau Contractor
Commitment: 09/30/09

II. GFI/S:

3.2.IIa Action: Concur on Safeguard Termination Limit (STL) for very low plutonium content mixed oxides.
Responsible: DOE-HQ
Commitment: 08/30/02

3.2.IIb Action: Concur on STL for low plutonium content mixed oxides.
Responsible: DOE-HQ
Commitment: 10/31/02

3.2.IIc Action: Approve decommissioning Health and Safety Plan (HASP) for 232-Z.
Responsible: DOE-HQ
Commitment: 12/30/02

3.2.IId Action: Obtain 9975 Certificate of Compliance amendment.
Responsible: DOE-HQ
Commitment: 12/31/02

3.2.IIe Action: International Atomic Energy Agency (IAEA) agreement to allow processing of PFP material.
Responsible: DOE-HQ
Commitment: 01/01/03

3.2.IIf Action: Obtain Washington State approval of National Historic Preservation Act (NHPA) Curation Plan and Mitigation Plan for transition to slab on grade.
Responsible: DOE-RL
Commitment: 01/30/03

3.2.IIg Action: Obtain Washington State Department of Health approval of Notice of Construction for 241-Z cell cleanout.
Responsible: DOE-RL
Commitment: 01/30/03

3.2.IIh Action: Approve supplement analysis and ROD amendment for weapons grade material.
Responsible: DOE-HQ
Commitment: 03/30/03

3.2.IIi Action: Approve supplement analysis and ROD amendment for non-weapons (fuel) grade material.
Responsible: DOE-HQ
Commitment: 04/30/03

3.2.IIj Action: Approve SRS/RL Shipping and Receiving Plan.
Responsible: SRS and DOE-RL
Commitment: 05/30/03

3.2.IIk Action: Provide safe and secure transports (SST).
Responsible: DOE-HQ
Commitment: 06/30/03

3.2.IIl Action: Approve 234-5Z Deactivation and Decommissioning BIO.
Responsible: DOE-RL
Commitment: 10/12/03

3.2.IIm Action: Obtain Ecology approval of CERCLA EE/CA and Action Memorandum for dismantlement of 232-Z.
Responsible: DOE-RL
Commitment: 12/30/03

3.2.IIn Action: Obtain Ecology approval of CERCLA EE/CA and Action Memorandum for dismantlement of PFP.
Responsible: DOE-RL
Commitment: 02/1/07

III Key Decisions:

3.2.IIIa Action: Concur on STL for very low plutonium content mixed oxides.
Responsible: DOE-HQ
Commitment: 08/30/02

3.2.IIIb Action: Concur on STL for low plutonium content mixed oxides.
Responsible: DOE-HQ
Commitment: 09/30/02

3.2.IIIc Action: International Atomic Energy Agency (IAEA) agreement to allow processing of PFP material.
Responsible: DOE-HQ
Commitment: 01/01/03

3.2.IIId Action: Approve Supplemental Analysis and Record of Decision (ROD) amendment for weapons grade material.
Responsible: DOE-HQ
Commitment: 03/30/03

3.2.IIIe Action: Issue Supplemental Analysis and ROD amendment for non-weapons (fuel) grade material.
Responsible: DOE-HQ
Commitment: 04/30/03

3.2.IIIf Action: Approve deviation to new Design Basis Threat (DBT) requirements for 2736-ZB to avoid upgrades prior to deinventory (assume DBT is issued by 9/30/02).
Responsible: DOE-HQ
Commitment: 04/30/03

IV. Uncertainties/Assumptions:

- Incremental Funding to support the new DBT requirements
- Disposition of the fuel currently storage at PFP
- Approval Issue Supplement Analysis and ROD amendment for non-weapons (fuel) grade material
- Approve Supplement Analysis and ROD amendment for weapons grade material
- Savannah River Site is available to accept plutonium shipments, both fuel and 3013 containers

3.3 Cesium/Strontium (Cs/Sr) Capsules

I. Milestones:

3.3.Ia Action: Complete Cs/Sr Capsule Disposition Feasibility Report.
Responsible: Fluor Hanford
Commitment: Completed 05/31/02

3.3.Ib Action: Start capsule disposition preferred option selection.
Responsible: Fluor Hanford
Commitment: 10/01/02

3.3.Ic Action: Complete Systems/Facilities Engineering Analysis and Preferred Option Report.
Responsible: Fluor Hanford
Commitment: 09/01/03

3.3.Id Action: Complete detailed engineering/design documents for dry storage.
Responsible: Fluor Hanford
Commitment: 10/01/04

3.3.Ie Action: Complete fabrication and construction/modifications for dry storage.
Responsible: Fluor Hanford
Commitment: 07/01/06

3.3.If Action: Start transfer of first capsule to dry storage.
Responsible: Fluor Hanford
Commitment: 09/30/06

3.3.Ig Action: Complete transfer of 33% of capsules to dry storage.
Responsible: Central Plateau Contractor
Commitment: 09/30/07

3.3.Ih Action: Complete transfer of last capsule to dry storage.
Responsible: Central Plateau Contractor
Commitment: 09/30/08

3.3.Ii Action: Complete Waste Encapsulation Storage Facility (WESF) deactivation.
Responsible: Central Plateau Contractor
Commitment: 09/30/10

II. GFI/S:

3.3IIa Action: Approve preferred capsule disposition option.
Responsible: DOE-RL
Commitment: 09/30/03

3.3IIbAction: Complete NEPA Review for the dry storage facility.
Responsible: DOE-RL
Commitment: 03/30/04

3.3.IIc Action: Approve Authorization Basis documentation for the dry storage facility.
Responsible: DOE-RL
Commitment: 05/31/04

3.3.IId Action: Obtain Part B permit and Notice of Construction (NOC) required for dry storage of Cs/Sr capsules.
Responsible: DOE-RL
Commitment: 09/30/05

3.3.IIe Action: Approve Vulnerability Assessment for dry storage of Cs/Sr capsules.
Responsible: DOE-RL
Commitment: 09/30/06

3.3.IIf Action: Approve Basis for Interim Operation (BIO) for deactivated WESF.
Responsible: DOE-RL
Commitment: 09/30/07

III. Key Decisions:

3.3.IIIa Successfully negotiate an Agreement-In-Principle with Office of Civilian Radioactive Waste Management for the Yucca Mountain Repository to revise the waste acceptance criteria to accept the capsules (non-vitrified); and that the capsules will meet the LDR standards.
Responsible: DOE-HQ
Commitment: 07/01/03

3.3.IIIb Obtain approval to directly ship capsules to the Yucca Mountain Repository by September 2012. If the capsules need to be vitrified, DOE-ORP needs notification by September 2012 to incorporate the capsules into their baseline so as to complete vitrification by 2028.
Responsible: DOE-RL

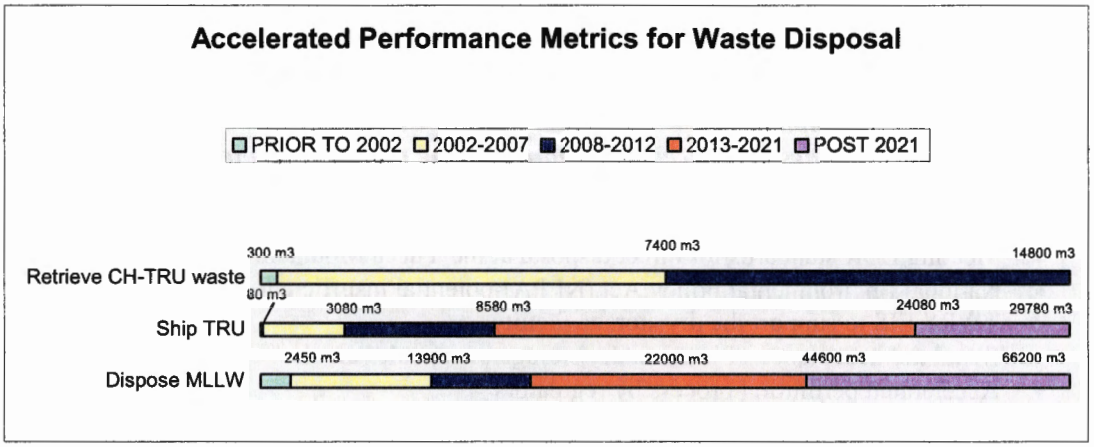
Commitment: 09/30/2012

IV. Uncertainties/Assumptions:

The following uncertainties may necessitate changes in the project schedule:

- Revision to the waste acceptance criteria to accept the capsules (non-vitrified) at the Yucca Mountain Repository
- Meeting LDR standards for direct disposal at the Yucca Mountain Repository
- National Environmental Policy Act (NEPA)-potential insufficient coverage from the TWRS EIS to support the dry storage facility
- Regulator acceptance of interim, dry storage of capsules on-site
- Accelerated permitting process by regulators
- Accelerated Authorization Basis documentation review
- The project schedule was based on available information and subject to revision as the project baseline becomes more definitive
- Milestone Items 3.3.Id – 3.3.Ii are contingent on the results of the Preferred Options Alternative Study.

Strategic Initiative 4: Accelerate Waste Disposal [25]



I. Milestones:

4.Ia Action:	Issue the Record of Decision for the Hanford Site Solid Waste Environmental Impact Statement.
Responsible:	DOE-RL
Commitment:	01/31/03
4.Ib Action:	Initiate buried suspect transuranic waste (TRU) drum retrieval.
Responsible:	Fluor Hanford
Commitment:	04/30/03
4.Ic Action:	Initiate construction of lined mixed low level waste (MLLW)/low level waste (LLW) disposal facilities.
Responsible:	Fluor Hanford
Commitment:	04/30/05
4.Id Action:	Complete retrieval, designation, and storage/disposal of 15,000 drum-equivalents of post 1970 suspect TRU.
Responsible:	Fluor Hanford
Commitment:	09/30/06
4.Ie Action:	Complete - scoping, risk, and associated environmental documentation supporting decisions as to the extent to which remaining post-1970 and pre-1970 TRU must be retrieved.
Responsible:	DOE-RL
Commitment:	09/30/06

[25] DOE and Ecology are currently negotiating TPA commitments regarding Hanford Site TRU waste and MLLW under milestone M-91. The resolution of these negotiations is likely to affect the wording of this initiative.

4.If Action: Initiate use of lined MLLW/LLW disposal facilities.
Responsible: Central Plateau Contractor
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: Central Plateau Contractor
Commitment: 09/30/08

4.Ih Action: Complete post-1970 suspect CH-TRU retrieval operations in the low-level burial grounds.
Responsible: Central Plateau Contractor
Commitment: 09/30/10

4.Ii Action: Complete certification and shipment of all legacy CH-TRU (approximately 7,500 cubic meters) to the Waste Isolation Pilot Plant (WIPP). Additionally, to support WIPP's goal of disposal of legacy waste by 2013, all drums and small boxes will be shipped by 9/30/13
Responsible: Central Plateau Contractor
Commitment: 09/30/15

II. GFI/S:

4.IIa Action: Approve the Documented Safety Analysis (DSA) for buried TRU retrieval.
Responsible: DOE-RL
Commitment: 09/30/02

4.IIb Action: Obtain a Record of Decision for the Hanford Solid Waste Environmental Impact Statement (HSW EIS) that supports MLLW receipt, treatment, storage and disposal operations consistent with this initiative. This ROD must also support TRU retrieval, processing, and certification and the lined disposal facility consistent with this initiative.
Responsible: DOE-RL
Commitment: 01/30/03

4.IIc Action: Provide mobile TRU processing units for drum retrieval and processing operations.
Responsible: CBFO
Commitment: 07/31/03

4.IId Action: Provide transportation resources to support shipment of TRU to WIPP.
Responsible: CBFO
Commitment: 03/31/03

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

Responsible: DOE-RL
Commitment: 07/22/03

4.IIf Action: Submit for approval remaining environmental permitting documentation to allow MLLW receipt, treatment, storage, and disposal operations consistent with this initiative.
Responsible: DOE-RL
Commitment: 04/30/04

4.IIg Action: Provide mobile TRU processing units for box retrieval and processing operations.
Responsible: CBFO
Commitment: 03/01/05

III. Key Decisions:

4.IIIa Action: Determine appropriate level of readiness activities for TRU retrieval operations.
Responsible: DOE-RL
Commitment: 08/31/02

4.IIIb Action: Determine required mobile TRU processing capabilities and schedule to support TRU retrieval consistent with this initiative.
Responsible: DOE-RL
Commitment: 10/01/02

4.IIIc Action: Determine preferred options for LLW and MLLW disposal facilities.
Responsible: DOE-RL
Commitment: 09/30/03

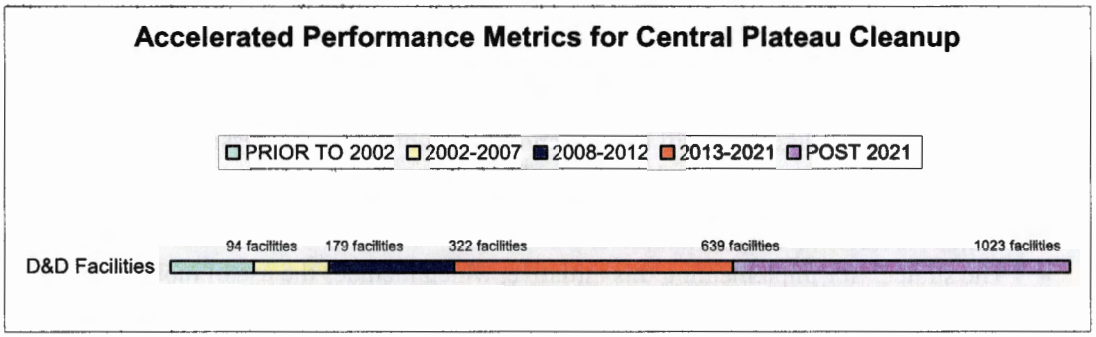
4.IIId Action: Determine schedule and required capability for RH TRU processing and shipping.
Responsible: DOE-RL
Commitment: 09/30/07

IV. Uncertainties/Assumptions:

- Local availability of commercial non-thermal waste treatment capability will remain available and thermal treatment capability will be available in the future. Future pricing will be comparable to our existing contracts. The approval of the 200 Liquid Waste Processing Facility delisting petition modifications by the Environmental Protection Agency (EPA) will occur in fiscal year 2003.
- Regulatory agencies will approve required waste management facilities dangerous waste permit modifications and other permitting documents on a schedule to support this initiative.
- Alternate disposal paths, such as ERDF for on-site MLLW, will be negotiated with the appropriate regulatory agencies.
- A path forward for dealing with high-concentration, breached, classified or other non-standard waste containers will be determined.

- The Carlsbad Field Office will provide sufficient transportation resources to support the accelerated schedules of this initiative.
- There are no significant changes to the TRU program certification requirements or WIPP-Waste Acceptance Criteria for CH TRU.
- The WIPP Waste Acceptance Criteria for RH TRU is issued by 2005 and does not require significant changes in the TRU Program.
- The Carlsbad Field Office will provide and fund mobile TRU processing systems with the capability and on the schedule required to support this initiative.
- The cost and schedule impacts of the waste volumes associated with the acceleration initiatives have not been determined.
- The strategy for implementing this initiative, which includes the use of mobile vendor systems, can be pursued consistent with existing labor agreements.
- The authorization basis for the Waste Management operations can be modified to allow the required activities to support this initiative (outdoor staging of TRU drums, operations of mobile units, etc.).

Strategic Initiative 5: Accelerate Central Plateau Cleanup



I. Milestones:

5.Ia Action:	Submit to RL a plan to optimize the timing and sequencing for disposition of excess facilities and remediation of waste sites that pose the highest threat to groundwater.
Responsible:	Fluor Hanford
Commitment:	05/30/03
5.Ib Action:	Submit to RL a baseline plan for the proposed disposition of the remaining four canyons, including scope, schedule, budget and recommendations on potential waste disposition opportunities.
Responsible:	Fluor Hanford
Commitment:	09/30/03
5.Ic Action:	Complete the Remedial Design Report/Remedial Action Work Plan for implementation of the U Plant ROD.
Responsible:	Fluor Hanford
Commitment:	12/31/03
5.Id Action:	Eliminate U Plant Area septic system discharges.
Responsible:	Fluor Hanford
Commitment:	09/30/04
5.Ie Action:	Repair, upgrade, reroute, deactivate or remove U Plant Area water lines[26].
Responsible:	Fluor Hanford
Commitment:	09/30/04
5.If Action:	Complete the decommissioning of U Plant Area non-compliant/unused wells.
Responsible:	Fluor Hanford
Commitment:	09/30/05
5.Ig Action:	Complete Remediation of U Plant Regional Closure Waste Sites.

[26] These water lines are needed to serve the 222-S laboratory which will be one of the last facilities to be deactivated; therefore, rerouting may be required.

Responsible: Fluor Hanford
Commitment: 09/30/06

5.Ih Action: Complete comprehensive plan for the remediation of excess Central Plateau facilities and waste sites.
Responsible: Central Plateau Contractor
Commitment: 09/30/08

5.Ii Action: Complete demolition of U Plant and ancillary facilities.
Responsible: Central Plateau Contractor
Commitment: 09/30/09

5.Ij Action: Complete construction of environmental cap (barrier system) for U Plant and waste sites within environmental cap footprint.
Responsible Central Plateau Contractor
Commitment: 09/30/11

II. GFI/S

5.IIa Action: Reach decision with regulators that the M-15-47 Milestone to prepare a surface barrier proposed plan will be used to address acceleration of the U cribs and waste sites surrounding U-Plant that would be impacted by the U-Plant regional closure.
Responsible: DOE-RL
Commitment: 09/30/02

III. Key Decisions:

5.IIIa Action: Obtain a Record of Decision for U Plant disposition.
Responsible: DOE-RL
Commitment: 06/30/03

5.IIIb Action: Obtain a Record of Decision for the U Plant regional closure waste sites.
Responsible: DOE-RL
Commitment: 03/31/04

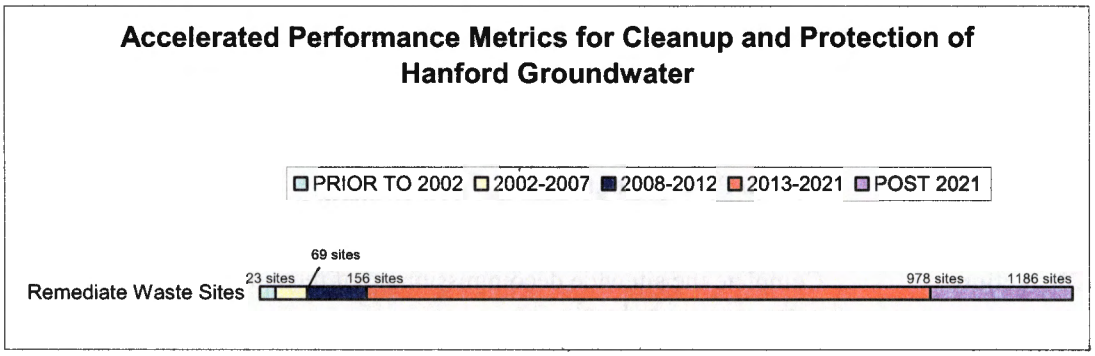
IV. Uncertainties/Assumptions:

- Surface barriers assumed preferred remedial alternative for cribs/trenches
  - Six surface barriers for eight U-Plant cribs.
- Excavation with ERDF disposal assumed for crib pipelines
- Sufficient characterization data available from past and planned RI/FS Work Plan activities to support regulatory decisions
- Soils for surface barriers available on Hanford Site

- Acceptability of U Plant 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 09/30/11
- ROD dates have been identified based on an assumed preparation schedule of 9 months following delivery of proposed plans.

Strategic Initiative 6: Accelerate Cleanup and Protection of Hanford Groundwater



I. Milestones:

Key Element 1-High-Risk Source Control

6.1.Ia Action:	Complete the BC Control Area Cleanup.
Responsible:	Central Plateau Contractor
Commitment:	03/30/08
6.1.Ib Action:	Complete remedial actions on the 200-TW-1 Operable Unit waste sites in the BC Area.
Responsible:	Central Plateau Contractor
Commitment:	06/30/09
6.1.Ic Action:	Complete remedial actions on 200-PW-2 and 200-PW-1 (PUREX and PFP waste sites).
Responsible:	Central Plateau Contractor
Commitment:	09/30/11
6.1.Id Action:	Complete remedial actions on the 200-LW-1 Operable Unit waste sites in the BC Area.
Responsible:	Central Plateau Contractor
Commitment:	09/30/12

Key Element 2-Dramatically Reduce Recharge Conditions

6.2Ia Action:	Complete the upgrade of the site water supply system pumps.
Responsible:	Fluor Hanford
Commitment:	09/30/04
6.2Ib Action:	Identify Central Plateau septic systems posing high risk to groundwater, review alternatives, and develop a prioritized plan for repair, modification, or replacement.
Responsible:	Fluor Hanford
Commitment:	09/30/04

6.2Ic Action: Complete the sitewide decommissioning of 380 high-risk wells and 70 unused wells near remediation sites.
Responsible: Fluor Hanford
Commitment: 09/30/06

6.2Id Action: Complete Central Plateau water system renovations.
Responsible: Central Plateau Contractor
Commitment: 09/30/08

6.2Ie Action: Complete the sitewide decommissioning of remaining non-compliant/unused wells.
Responsible: Central Plateau Contractor
Commitment: 09/30/18

Key Element 3-Shrink the Footprint of Contaminated Areas

6.3Ia Action: Complete remedial actions on the central landfill area waste sites (NRDWL/SWL).
Responsible: Central Plateau Contractor
Commitment: 09/30/07

6.3Ib Action: Complete remedial actions on the Gable Mountain/B Pond waste sites and 200 North facilities and waste sites.
Responsible: Central Plateau Contractor
Commitment: 12/31/08

6.3Ic Action: Complete remedial actions on the 618-10 and –11 burial grounds.
Responsible: Central Plateau Contractor
Commitment: 12/31/18

Key Element 4-Resolve Current Pump-and-Treat Operations

6.4Ia Action: Complete the Carbon Tetrachloride DNAPL Field Investigation.
Responsible: Fluor Hanford
Commitment: 12/31/04

6.4Ib Action: Complete effectiveness review of sitewide pump-and-treat as part of the Five-Year Remedy Review. It will be an integrated review with EPA, Ecology, and DOE.
Responsible: Fluor Hanford
Commitment: 12/31/05

6.4Ic Action: Complete N-Springs Phytoremediation Field Deployment, if appropriate.
Responsible: Fluor Hanford
Commitment: 12/31/05

6.4Id Action: Complete N-Springs Apatite Barrier Field Deployment, if appropriate.
Responsible: Central Plateau Contractor
Commitment: 09/30/07

6.4Ie Action: Obtain approval of 100-NR-2 Record of Decision amendment to revise the selected interim remedial action.
Responsible: DOE-RL
Commitment: 09/30/09

Key Element 5-Integrate Site Monitoring Needs

6.5Ia Action: Complete 200-West high-priority well network enhancements.
Responsible: Fluor Hanford
Commitment: 09/30/03

6.5Ib Action: Complete 200-East high-priority well network enhancements.
Responsible: Fluor Hanford
Commitment: 09/30/04

6.5Ic Action: Complete Central Plateau well network enhancements.
Responsible: Fluor Hanford
Commitment: 09/30/05

II. GFI/S:

Key Element 1-High Risk Source Control:

6.1IIa Action: Decisions, requirements and approvals for constructing surface barriers.
Responsible: DOE-RL
Commitment: 09/30/03

6.1IIb Action: Ensure sufficient ERDF capacity to support associated remove and dispose actions.
Responsible: DOE-RL
Commitment: 09/30/04

Key Element 2-Eliminate Recharge Conditions

No key GFI/S beyond those listed as key decisions and milestones has been identified.

Key Element 3-Shrink the Footprint

6.3IIa Action: Commit EM-50 or incremental additional site funding for S&T initiatives required to support remedial decisions for the 618-10 and -11 Burial Grounds.
Responsible: DOE-EM
Commitment: 09/30/02

6.3.IIb Action: Decision on regulatory approach and funding for the removal of 200 North buildings/facilities to support an integrated geographic-based cleanup of the 200 North area.
Responsible: DOE-RL
Commitment: 03/31/03

Key Element 4-Resolve Current Pump-and-Treat Operations

6.4.IIa Action: Commit EM-50 or incremental additional site funding for S&T initiatives required to support remedial decisions for the 200-ZP-1 (carbon tetrachloride) Groundwater Operable Unit.
Responsible: DOE-EM
Commitment: 09/30/02

6.4.IIb Action: Commit EM-50 or incremental additional site funding for S&T initiatives required to support remedial decisions for N-Springs.
Responsible: DOE-EM
Commitment: 09/30/02

Key Element 5-Integrate Site Monitoring Needs

6.5.IIa Action: Establish U Plant region post-cleanup monitoring requirements.
Responsible: DOE-RL
Commitment: 09/30/06

III. Key Decisions:

Key Element 1-High Risk Source Control:

6.1IIIa Action: Obtain a Record of Decision for the 200-TW-1 soil-contaminated waste sites (applies to the BC Area remediation).
Responsible: DOE-RL
Commitment: 12/31/04

6.1IIIb Action: Obtain a Record of Decision for the 200-PW-2 soil-contaminated waste sites (applies to the PUREX Area remediation).
Responsible: DOE-RL
Commitment: 06/30/06

6.1IIIc Action: Obtain a Record of Decision for the 200-PW-1 soil-contaminated waste sites (applies to the PFP Area remediation).
Responsible: DOE-RL
Commitment: 12/31/06

6.1IIId Action: Obtain a Record of Decision for the 200-LW-1 soil-contaminated waste sites (applies to the BC Area remediation).
Responsible: DOE-RL
Commitment: 09/30/07

Key Element 2-Dramatically Reduce Recharge Conditions

No key decisions have been identified for this acceleration initiative.

Key Element 3-Shrink the Contaminated Footprint

No key decisions have been identified for this acceleration initiative.

Key Element 4-Resolve Current Pump-and-treat Operations

6.4.IIIa Action:	Obtain approval of the Carbon Tetrachloride DNAPL Field Deployment Plan.
Responsible:	DOE-RL
Commitment:	07/30/03

6.4.IIIb Action:	Obtain approval of the N-Springs Phytoremediation and Apatite Field Deployment Plan.
Responsible:	DOE-RL
Commitment:	09/30/03

Key Element 5-Integrate Site Monitoring Needs

6.5IIIa Action:	Obtain approval of the 200 West Integrated Groundwater Monitoring Plan.
Responsible:	DOE-RL
Commitment:	09/30/02

6.5IIIb Action:	Obtain approval of the 200 East Integrated Groundwater Monitoring Plan.
Responsible:	DOE-RL
Commitment:	03/31/03

IV. Uncertainties/Assumptions

- Surface barriers assumed preferred remedial alternative for cribs/trenches
  - Four surface barriers for 22 200-TW-1 BC cribs/trenches
  - One surface barrier for four 200-LW-1 BC cribs/trenches
  - Five surface barriers for five PUREX cribs
  - Five surface barriers for seven PFP Carbon Tetrachloride (CCL4)/Plutonium (Pu) cribs
- Surface barriers assumed preferred remedial alternative for landfill closure
  - 3 surface barriers for 3 landfills.
- The appropriateness of the surface barriers will be evaluated in CERCLA feasiblity study for each individual waste site.
- Obtain soils for surface barriers available on Hanford Site
- SWL and NRDWL (Central Landfill) closed under RCRA D and C Closure Plans, respectively
- Old Central Landfill closed under ROD
- 618-10 and -11 burial grounds treatability test of characterization, remediation and waste handling technologies deployable for final actions

- If 200 North is included with Gable Mountain Pond and B Pond as an area closure, additional dollars will be required for the facility closure activities
- Single well decommissioning contract for cost effectiveness
- High risk wells for decommissioning identified in 2003
- No significant soil contamination encountered during water line renovations
- Agreement on the endpoint for carbon tetrachloride (DNAPL) investigations
- 200-PW-1 vadose drilling will start 1/03
- ROD for source waste sites (200-PW-1) issued 03/31/07
- Integrate source (200-PW-1) and groundwater (200-ZP-1) DNAPL investigations
- Site monitoring wells based on coordinated RCRA/HWMA/CERCLA/AEA needs

Business Management

7.1 Contracting

I. Milestones

7.1.Ia Action:	Issue guidance to Hanford EM contractors related to accelerated cleanup objectives and renegotiation of contract terms and/or performance incentives.
Responsible:	DOE-RL and DOE-ORP
Commitments:	09/30/02
7.1.Ib Action:	Award RCC contract and start transition.
Responsible:	DOE-RL and DOE-HQ EM-1 & MA-60
Commitments:	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 were received 05/20/02, with award to occur 08/26/02, if discussions prove not to be necessary.
7.1.Ic Action:	Complete review of existing major contracts, identify changes, and renegotiate performance incentives to reflect the accelerated cleanup objectives.
Responsible:	DOE-RL and DOE-ORP
Commitments:	10/01/02
7.1.Id Action:	Complete RCC transition and new contractor assumes responsibility
Responsible:	DOE-RL and River Corridor Contractor.
Commitments:	Complete by 11/24/02 if no discussions or 02/06/03 if discussions are needed
7.1.Ie Action:	Reach decision on Central Plateau contracting approach.
Responsible:	DOE-RL and DOE-HQ EM-1
Commitments:	10/31/04
7.1.If Action:	Reach decision on new DOE-ORP operations contracting approach.
Responsible:	DOE-ORP and DOE-HQ EM-1
Commitments:	04/01/05
7.1.Ig Action:	Award new DOE-ORP operations contract(s).
Responsible:	DOE-ORP and DOE-HQ EM-1 and MA-60
Commitments:	04/01/06
7.1.Ih Action:	Award new Central Plateau Contract.
Responsible:	DOE-RL and DOE-HQ EM-1 and MA-60
Commitments:	07/01/06

II. GFI/S:

No additional GFI/S distinct from milestones listed above identified.

III. Key Decisions:

7.1.IIIa Action: Approve acquisition strategy for Central Plateau.
Responsible: Deputy Secretary, LPSO, EM-1 and DOE-RL
Commitment: 12/31/04

7.1.IIIb Action: Approve acquisition strategy for DOE-ORP operations.
Responsible: Deputy Secretary, LPSO, EM-1 and DOE-ORP
Commitment: 06/01/05

IV. Uncertainties/Assumptions:

- Award dates for the Central Plateau and ORP operations contracts are contingent upon final decisions resulting from strategy development.
- 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.

7.2 Streamlining Requirements

I. MILESTONES:

7.2.Ia Action: Tailor and Streamline Requirements – Increase productivity through elimination of unnecessary requirements and associated implementing documents.
Responsible: DOE-RL and Fluor Hanford
Commitments: Evaluate deleting 30 more orders from FHI contract (~30%) by 09/30/02.
Reduce FHI Manuals/Procedures from 650 to 400 by 03/31/03.

7.2.Ib Action: Tailor and Streamline Requirements – Evaluate the continued applicability of 60 DOE Orders to the CHG contract.
Responsible: DOE-ORP
Commitment: 09/30/02

7.2.1c Action: Implement a consistent EM approach in reporting no values for SNM (i.e., write off) identified as being excess to department needs in the department's financial accounting records. This action would eliminate the need for submitting the quarterly Departmental Inventory Management System (DIMS) report applicable to these SNM.
Responsible: DOE EM-1
Commitment: 09/30/02

7.2.Id Action: Document disposition actions for the top five Facility Managers' requirement reduction initiative.
Responsible: DOE-RL and Fluor Hanford
Commitment: 12/31/02

II. GFI/S:

No key GFI/S beyond those listed as key decisions and milestones has been identified.

III. KEY DECISIONS:

No key decisions have been identified for this acceleration initiative.

IV. Uncertainties/Assumptions:

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

7.3 Project Management

I. Milestones:

7.3.Ia Action: Complete Hanford Site work plan as required by the Letter of Intent
Responsible: DOE-RL and DOE-ORP.
Commitment: 08/01/02

7.3.Ib Action: Complete PBS-level Hanford Site integrated schedule and WBS for 2035 cleanup completion.
Responsible: DOE-RL and DOE-ORP
Commitment: 01/01/03

7.3.Ic Action: Finalize detailed integrated Hanford Site project baseline in support of accelerated cleanup by 2035.
Responsible: DOE-RL and DOE-ORP
Commitment: 01/01/04

7.3.Id Action: Optimize Hanford Site infrastructure component in the baseline in response to the January 2004 baseline.
Responsible: DOE-RL-AMC
Commitment: 07/31/04

II. GFI/S:

7.3.IIa Action: Issue direction to contractors on revising RL baseline.
Responsible: DOE-RL
Commitment: 09/30/02

III. Key Decisions:

No key decisions have been identified for this acceleration initiative.

IV. UNCERTAINTIES/ASSUMPTIONS

- Acceptance of Hanford Site work plan
- Constraints on budget profiles
- Decisions on initiatives identified by the Cleanup Constraints and Challenges Team (DOE, regulators, and contractors)
- River Corridor Project final baseline will not be available to support January 2003 integrated target baseline

7.4 Streamlining Safety and Health Management Systems

I. Milestones:

7.4.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:	DOE-RL and Fluor Hanford
Commitment:	09/30/02
7.4.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:	DOE-ORP
Commitment:	09/30/02
7.4.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:	DOE-RL
Commitment:	04/03
7.4.Id 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: DOE-RL
Commitment: 04/03

7.4.Ie 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: DOE-ORP
Commitments: By 05/15/02, submit to EM-1 the schedule for the submittal, approval, and implementation of the Rule-compliant Safety Analysis Report (SAR). By 04/10/03, the contractors will submit their Rule-compliant SAR.

II. GFI/S:

7.4.IIa Action: Approve ISM System for new contracts, and approve the Performance, Measures, Commitments and Objectives (ISMS Department of Energy Acquisition Regulations Clause).
Responsible: DOE-RL
Commitment: 60 days from date contract is awarded

7.4.IIb Action: Approve contractor Documented Safety Analyses required to meet 10CFR830.
Responsible: DOE-RL
Commitment: 04/03

7.4.IIc Action: DOE-RL develop strategy that allows DOE to request further delegations.
Responsible: DOE-RL
Commitment: 09/30/03

III. Key Decisions:

No key decisions have been identified for this acceleration initiative.

IV. Uncertainties/Assumptions:

Contractors meeting the 10CFR830 Implementation Strategy 4/03 date due to funding

7.5 Programmatic Risk Management

I. Milestones:

7.5.Ia Action: Produce Crosscutting Risk Management Spreadsheet for the Management and Mitigation of Programmatic Risk following completion of January 2003 Target Baseline.
Responsible: DOE-RL
Commitment: 02/28/03

II. GFI/S:

No key GFI/S beyond those listed as key decisions and milestones has been identified.

III. Key Decisions:

No key decisions have been identified for this acceleration initiative.

IV. Uncertainties/Assumptions:

No key uncertainties or assumptions have been identified for this acceleration initiative.

7.6 Financial Management

I. Milestones:

No key milestones have been specifically identified for the acceleration effort.

II. GFI/S:

7.6.IIa Action:	Provide Budget Control Point guidance to site contractors for FY 2003 budget execution.
Responsible:	DOE-RL and DOE-ORP
Commitment:	Issue guidance prior to 10/01/02
7.6.IIb Action:	Provide Budget Control Point guidance to site contractors for FY 2005-2009 budget formulation.
Responsible:	DOE-HQ EM-1, ME-1 (HQ/CFO), DOE-RL and DOE-ORP
Commitments:	DOE-HQ develops FY 2004 budget request for 2/03/03 submission to Congress in revised control point structure. DOE-RL and DOE-ORP issue guidance to site contractors prior to 02/03/03.
7.6.IIc Action:	Provide Budget Control Point guidance to site contractors for FY 2004 budget execution.
Responsible:	DOE-RL and DOE-ORP
Commitment:	Issue guidance prior to 10/01/03

III. Key Decisions:

7.6.IIIa Action:	Agree on multi-year funding profile to support accelerated cleanup initiatives in approved Performance Management Plans.
Responsible:	EM-1, ME-1 (HQ/CFO)
Commitments:	EM-1 briefs ME-1 by 07/12/02. EM-1 and ME-1 brief OMB and get approval by 08/15/02. EM-10 builds the agreed to multi-year funding profile into the FY 2004 Budget submittal to OMB.
7.6.IIIb Action:	Reduce number of EM budget control points for expense funded activities and capital line item projects at RL and ORP beginning with

FY 2004 budget request to Congress and FY 2005-2009 budget formulation.

Responsible: EM-1, EM-1 and ME-1 (HQ/CFO)

Commitments: Complete – DOE-RL and DOE-ORP submit FY 2004 budget to EM in existing control point structure by 06/20/02.
EM-1 and ME-1 (HQ/CFO) brief OMB on revised control point structure by 08/31/02.
EM-10 realigns Field FY 2004 budget request to revised control point structure submitted to OMB by 09/01/02.
EM-1 and ME-1 brief Congressional Appropriations staff on revised control point structure by 01/15/03.
President submits FY 2004 budget to Congress in revised control point structure on 02/03/03.

IV. Uncertainties/Assumptions:

- Ability of RL and ORP to align PBSs by contractor so that each Site contractor has only one expense funded control point under the revised EM structure.
- Ability of DOE to gain OMB and Congressional approval for reduced number of budget control points for RL and ORP

9.0 7.7 STREAMLINING HANFORD INFRASTRUCTURE

I. Milestones:

7.7.Ia Action: Complete "City Manager" implementation.

Responsible: DOE-RL-AMC

Commitment: Get final resolution on the approach to be used on all elements of the "City Manager" concept with all Prime Contractors including an implementation plan by 12/31/02.

7.7.Ib Action: Complete study, implementation plan, and initiate action to move on-site contractor office personnel into off-site, commercially available office space and utilize telework/telecommuting options, when cost effective. The implementation plan must include the methodology and a comprehensive analysis for specific groups of similar personnel.

Responsible: Fluor Hanford, DOE-RL

Commitments: Complete study and implementation plan by 09/30/02. Initiate personnel moves by 12/31/02. Complete relocation of on-site personnel by 09/30/03.

7.7.Ic Action: Work to transfer administrative control of the ALE, Riverlands, and Wahluke Slope National Monument land to the Department of the Interior (DOI).

Responsible: DOE-RL

Commitment: With mutual agreement with DOI, transfer ALE to DOI by 09/30/04 and the Riverlands and Wahluke Slope by 09/30/05.

II. GFI/S:

7.7.IIa Action:	Issue letter(s) of direction as necessary to implement the off-site move results.
Responsible:	DOE-RL
Commitments:	Write contractor direction letter(s) as necessary and promulgate to the Hanford site contractors, by 11/30/02.
7.7.IIb Action:	Issue letter(s) of direction to implement the "City Manager" results.
Responsible:	DOE-RL-AMC
Commitment:	Write necessary contractor direction letter(s) by 03/30/03.
7.7.IIc Action:	Issue contract letter(s) of direction to conduct land transfer activities.
Responsible:	DOE-RL-AMC
Commitment:	When agreement with DOI on transfers and schedule has been reached.

III. Key Decisions:

Key decisions are included in the GFI/S above.

IV. Uncertainties/Assumptions:

- 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
- Projects will fund specific infrastructure upgrades necessary for acceleration of their work scopes.
- Increase in risk of production/operations interruptions due to infrastructure failures.
- USFWS agreeing to accept the conveyance of land from DOE.

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 us 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 $30 – $40 billion from the current plan to substantially complete risk reduction and cleanup work at Hanford. This project is one of the largest and most complex nuclear cleanup projects 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 accelerates 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.
- Aggressively self assess company 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 deployable solutions to challenges in accelerating risk reduction and cleanup at Hanford.
- Continue to place the safety and health of all Hanford Site personnel paramount to the accelerated program and to advance dialogue on safety and health policy issues affecting the site.

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

- Sustain and implement a program consistent with the requirements of the TPA;
- Empower the Hanford Team to manage the site in a private sector model wherever practicable and to facilitate efforts to make accelerated 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 a safe accelerated risk reduction mission;
- Restructure and realign the 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 a cost-effective, technically-based manner that supports timely decision-making by DOE senior management and supports the accelerated cleanup actions at Hanford.
- Support the site's science and technology program with investments in infrastructure and demonstrations that have the near-term and long-term potential for significant risk reduction and cleanup acceleration.
- Ensure the continuance of high quality, cost-effective medical care of Hanford workers.
- Provide timely and effective support of Hanford Team contractor efforts to control and correct potential safety and health risks that may arise as a result of the accelerated program.

This commitment does not modify any rights, authorities, or obligations of the prime contractor parties under their respective contracts with DOE.

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

Roy J. Schepens, Manager
U.S. Department of Energy
Office of River Protection

E. Keith Thomson
President and CEO
Fluor Hanford, Inc.

Michael C. Hughes
President
Bechtel Hanford, Inc.

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

Ronald F. Naventi
Senior Vice President
Bechtel National, Inc.

Lura J. Powell
Director
Pacific Northwest National Laboratory

Lee T. Ashjian
President and CEO
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 $30 - $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.
- Work with site contractors, regulators, area Tribal Nations, and stakeholders to ensure that the site's science and technology program actively works to provide cost-effective, real time solutions to both near-term and long-term challenges in accelerating risk reduction and cleanup at Hanford.
- Develop a government-furnished items and services (GFI/S) 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, area Tribal Nations and stakeholders in resolving site issues.
- Rapidly work issues with Headquarters that require DOE support or action to resolve.
- Ensure waste designated for offsite shipments meets the waste acceptance requirements of the receiver sites.

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 a cost-effective, technically based manner that supports timely decision-making by DOE senior management and supports 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 deployable solutions to challenges in accelerating risk reduction and cleanup at Hanford.
- Work with EPA to assure appropriate classification and disposition of wastes 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.

EPA

WASHINGTON STATE DEPARTMENT OF ECOLOGY

OREGON OFFICE OF ENERGY

Ms. Jessie Hill Roberson
Assistant Secretary
for Environmental Management
U. S. Department of Energy
1000 Independence Avenue S.W.
Washington, D.C. 20585

June 28, 2002

Dear Ms. Roberson,

SUPPORT FOR THE PERFORMANCE MANAGEMENT PLAN FOR THE CLEANUP OF THE HANFORD SITE (PMP)

One year ago, the State of Washington Department of Ecology, the U. S. Environmental Protection Agency, and the U. S. Department of Energy along with representatives from the State of Oregon embarked on a process to establish a common vision for the cleanup and closure of the Hanford Site. This process was designed to explore targets of opportunity, which offered potential cost and/or schedule reductions while maintaining the same quality of environmental cleanup. As agreements were reached, the pathway for memorializing the agreements was to be through existing change processes in the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement).

Significant progress has been made. We have reached agreement on the acceleration of the cleanup of the River Corridor which will significantly reduce the site footprint and achieve major cost savings by reducing "mortgage cost;" a streamlined process for cleanup of the Central Plateau waste sites which includes integration with other Central Plateau cleanup decisions; and a cleanup strategy for the Plutonium Finishing Plant and the residual plutonium inventories. These are just some examples of complex issues we have resolved together.

These mutual efforts are continuing. Many of the targets of opportunity identified this past year are under active evaluation and implementation. The draft PMP captured these initiatives. We are comfortable with the open, collegial process being used to obtain and resolve comments and to incorporate further improvements to that draft. Assuming incorporation of the results of the previous and June 2002 Cleanup Constraints and Challenges Team (C3T) meetings, we are confident this next version of the PMP will result in a path forward that could achieve cleanup sooner and save $30 to $40 B.

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These cost and time savings would be achieved through increasing capacity of the Waste Treatment Plant; pursuing early high-level waste tank closure demonstrations to serve as a model for closing all 177 tanks; accelerating the recovery, stabilization, and disposition of plutonium inventories; developing an integrated regulatory strategy for cleanup and closure of the Central Plateau; and accelerating the treatment and disposal of low-level and mixed waste inventories and recovery and shipment of TRU waste to the Waste Isolation Pilot Plant.

In jointly endorsing the PMP initiatives, we are assuming that sufficient funding will be provided. Early investment initiatives prescribed in the PMP can reap huge schedule and cost reductions. Our support for the PMP also assumes continued support from Washington, D.C. (DOE-HQ, OMB, and Congress) in doing what they need to do to help us achieve the accelerated schedules and cleanup goals envisioned in the PMP. This includes continued commitment to and funding for the Waste Treatment Plant.

We appreciate your continued support as we move toward implementation of the Hanford PMP initiatives. We can only carry out these initiatives if DOE secures funding and provides complex-wide leadership and integration for all inter-site transactions. In closing, we want to reiterate our commitment to work proactively with the Department to expedite the cleanup and help keep the costs to the taxpayers to the minimum needed for a quality cleanup.

Tom C. Fitzsimmons, Director
State of Washington
Department of Ecology

L. John Iani, Regional Administrator
U. S. Environmental Protection Agency
Region 10

Michael W. Grainey, Director
State of Oregon
Office of Energy

Hanford's proposed plan has been approved by the Assistant Secretary for Environmental Management, Jessie Roberson, and was submitted to the Office of Management and Budget in August.