Hanford Waste Management Program

STRATEGIC PLAN

February 2001

Waste Treatment/Processing, Storage and Disposal

Interfaces

Program Excellence

INTRODUCTION

We are pleased to present the 2001 *Hanford Waste Management Program Strategic Plan*. This plan supports the newly developed U. S. Department of Energy Site outcomes strategy. The 2001 Plan reflects current and projected needs for Waste Management Program services in support of Hanford Site cleanup, and updates the objectives and actions using new waste stream oriented logic for the strategic goals: (1) waste treatment/processing, storage, and disposal; (2) interfaces; and (3) program excellence. Overall direction for the Program is provided by the Waste Management Division, Office of the Assistant Manager for Environmental Restoration & Waste Management, U. S. Department of Energy, Richland Operations Office. Fluor Hanford, Inc. is the operating contractor for the program.

This Plan documents proactive strategies for planning and budgeting, with a major focus on helping meet regulatory commitments in a timely and efficient manner and concurrently assisting us in completing programs cheaper, better and quicker. Newly developed waste stream oriented logic was incorporated to clarify Site outcomes. External drivers, technology inputs, treatment/processing, storage and disposal strategies, and stream specific strategies are included for the six major waste types addressed in this Plan (low-level waste, mixed low-level waste, contact-handled transuranic waste, remote-handled transuranic waste, liquid waste, and cesium/strontium capsules). The key elements of the strategy are identification and quantification of the needs for waste management services, assessment of capabilities, and development of cost-effective actions to meet the needs and to continuously improve performance. Accomplishment of specific actions as set forth in the Plan depends on continued availability of the required resources and funding.

The primary objectives of Plan are: 1) enhance the Waste Management Program to improve flexibility, become more holistic especially by implementing new technologies, be responsive to the customer, and improve control over unknowns through contingency planning; 2) redefine major tasks that must be performed and integrate the relationship of tasks to balance RL operations, Office of River Protection, and off-site customers; 3) enhance readiness to meet all future waste treatment/processing and disposal needs for the Hanford mission; 4) support and justify out-year budget requests; and 5) provide a logical basis for restructuring waste management regulatory commitments and develop more effective tools for meeting those commitments.

We look forward to working together and with our regulators and stakeholders to achieve the Program goals set forth in this Strategic Plan.

G. H. Sanders, Director
Waste Management Division
DOE-RL

EXECUTIVE SUMMARY

This 2001 Hanford Waste Management Program Strategic Plan sets forth the major goals, objectives, and strategies for accomplishing the Program mission. The Plan describes and quantifies the requirements for waste treatment/processing, storage, and disposal and for interfaces that the Program provides to other Hanford Site programs. Strategies are presented to meet these requirements while improving the quality and efficiency of operations and reducing the cost of services. The Program will continue to focus on safety in all of its activities. Three strategic goals have been established.

Treatment/Processing, Storage and Disposal of Waste - The Program will apply systems engineering in the development of baseline waste Disposition Maps (onsite and national) for all assigned treatment/processing, storage, and disposal activities in support of Site outcomes. The Program also will support national efforts (e.g., the Environmental Management Integration) to accelerate cleanup and reduce waste management costs across the U. S. Department of Energy complex. The Plan discusses disposition for each major waste stream. Strategies are summarized as follows.

Low-Level Waste. Low-level waste from onsite and off-site generators will continue to be disposed in the Low-Level Burial Grounds through FY 2046. A LLW disposal analysis will be completed by the end of March 2003. This analysis will evaluate LLW disposal alternatives in consideration of the Solid Waste Environmental Impact Statement Record of Decision, Canyon Disposition Initiative, and Nevada Test Site/RL cooperative strategy.

The Waste Management Program will be responsive to changes that may be imposed by external factors. These changes may include new opportunities to support waste disposal needs of the DOE Complex and limits to the amount of waste that can be disposed in the existing LLBG footprint.

Mixed Low-Level Waste. Hanford mixed low-level waste will be treated and disposed onsite. The current MLLW inventory is stored primarily in the Central Waste Complex. The plan presents specific stream strategies for direct disposal, non-thermal treatment, thermal treatment, unique wastes, oversized and remote-handled waste, and defueled Naval reactor compartments. The plan also includes strategies for disposal of ORP long-length equipment and spent melters from the Waste Treatment Plant. A key element in the overall MLLW strategy is to plan and schedule waste treatment so that no additional storage capacity is required.

Contact-handled MLLW in oversized containers and remote-handled MLLW will be treated using the M-91 capability which includes the existing T Plant Complex, commercial contracts, and additional capabilities, if any, that will be defined by the end of FY 2007.

Several external factors can affect how the MLLW strategies will be implemented. The Records of Decision for the Solid Waste and the Programmatic Environmental Impacts Statements, the EM integration effort, determination of the Land Disposal Restriction report scope, and consideration of equity issues with the State of Washington can influence the waste treatment disposal scope.

Contact-Handled Transuranic Waste. Stored, retrieved, and newly generated contact-handled transuranic waste will be processed at the Waste Receiving and Processing Facility for shipment to the Waste Isolation Pilot Plant through FY 2032. Boxed waste will be processed using M-91 capability and waste containing polychlorinated biphenyls will be stored pending a determination of the

acceptability of such waste at WIPP. A preliminary waste retrieval plan will be established in FY 2002, and the final plan will be issued in FY 2005 incorporating the Records of Decision of the Solid Waste EIS. All drums buried between 1970 and 1988 will be retrieved by the end of FY 2014. Boxes and other containers will remain in the burial grounds awaiting processing through M-91 starting in FY 2013.

Stream specific strategies are presented for transuranic waste stored in CWC and in the LLBG, waste from the 241-Z-361 tank, newly generated waste from Site facilities, waste from the 618-10/11 caissons, and off-site waste as determined by the Programmatic EIS ROD.

Remote-Handled Transuranic Waste. Stored, retrieved, any newly generated remote-handled transuranic waste will be processed using the M-91 capability for shipment to WIPP through FY 2032. Stream specific strategies are presented for K Basins sludge, waste in oversized containers, waste in caissons, and newly generated waste from Site facilities. Implementation of these strategies will be affected by many external factors, including Records of Decision for the Solid Waste and the Programmatic EIS, the Canyon Disposal Initiative, the PUREX Tunnel ROD and/or RCRA closure plans, the 618-10/11 ROD, and policy decisions pertaining to WIPP. In addition, alternative analyses will be prepared to address new technology needed for waste retrieval from the LLBG and TRU caissons.

Liquid Waste. The Liquid Effluent Retention Facility, Liquid Effluent Treatment Facility, 200 Area Treated Effluent Disposal Facility, and the 242-A Evaporator facilities will be operated to meet customer needs, including new requirements set by the ORP Waste Treatment Plant. Projects to provide needed facility upgrades and extend facility life will be evaluated and implemented as needed.

The ETF provides treatment of 200 UP-1 groundwater; water from K Basins cold vacuum drying, rinsing, and basin draining upon deactivation; 242-A Evaporator process condensate; Environmental Restoration Disposal Facility and Mixed Waste Trench leachate; and groundwater monitoring purge water. Future services include processing of ORP WTP radioactive liquid effluents and melter trench leachate beginning in FY 2006, and Waste Encapsulation and Storage Facility pool cell water starting in FY 2018. Modifications to the ETF waste solidification system may be required based on the expected composition and volume of the WTP radioactive liquid waste stream. Also a life extension upgrade is planned for LERF in FY 2015, based on its 20-year design life. Operation of LERF and ETF is planned to continue until FY 2031; facility cleanout is scheduled in FY 2032, with transfer to deactivation the following year.

200 Area TEDF operation will continue until FY 2035 to dispose wastewater from the Plutonium Finishing Plant, T Plant, WESF, and the 222-S Laboratory. The facility also disposes of cooling water from the 242-A Evaporator. The ORP WTP is expected to send non-radioactive liquids to 200 Area TEDF for disposal beginning in FY 2007. A life extension upgrade project is planned for FY 2009, and the facility is expected to be operated through FY 2035.

The 242-A Evaporator will be operated on a campaign basis to support ORP tank farm operations. Operation of the Evaporator is planned to continue until FY 2018; facility cleanout is scheduled in FY 2019, with transfer to deactivation the following year. An engineering study is underway to determine the role of the Evaporator in supporting the WTP. The outcome of this study could significantly affect plans to upgrade or replace the condenser in FY 2004, and could result in long term (beyond 2018) operation of the Evaporator.

Cesium and Strontium Capsules. The Waste Encapsulation and Storage Facility will be operated for the safe storage of cesium and strontium capsules until the capsules are transferred to the ORP WTP for vitrification and disposal. The transfer is planned to start in FY 2013 and be complete at the end of FY 2017. Cleanout of the facility will be completed in FY 2019, followed by deactivation and transfer to the Environmental Restoration Program in FY 2020. These dates are based on the WTP achieving full operation in FY 2011.

Interfaces - Achievement of the Waste Management Program goals and objectives requires close working relationships and coordinated planning among DOE-RL, ORP, and the site contractors. Effective working relationships also must be maintained with DOE-HQ, other DOE sites, regulators, state and local governments, the public, the Hanford Advisory Board, Tribal Nations, private industry, and Congress.

Program Excellence - The Waste Management Program will strive to achieve excellence in the management of all Program activities and operations. Emphasis will be placed on utilizing efficiencies, technologies, and cost reductions to accelerate cleanup activities. The Program will maintain the principles of the Integrated Environment, Safety, and Health Management System (ISMS) to provide a safe and productive work environment. A major objective is to continue to reduce the cost of Waste Management Program operations and services through consolidation of services, closure of unneeded facilities, the application of new technology, and the appropriate use of commercial practices. Performance measurement and evaluation will provide the basis for tracking continuous improvement.

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MISSION

The mission of the Hanford Waste Management Program is to support the restoration of the Columbia River corridor and transition of the Hanford Site Central Plateau to a long term Waste Management operation by managing programmatic Hanford activities related to radioactive solid waste, liquid waste, and cesium and strontium capsules. Activities include retrieval, storage, treatment/processing, and disposal.

VISION

The Hanford Waste Management Program will be recognized for its leadership in waste handling and operations. We will provide the most reliable, efficient, and cost-effective waste management services in the DOE Complex.

CORE VALUES

The Hanford Waste Management Program embraces the following values established by the U. S. Department of Energy, Richland Operations Office for the Hanford Site:

SAFETY – The safety and health of our workers and the public will not be compromised. We place a high priority on managing and reducing the risks in the workplace as well as risks to the public and the environment.

RESULTS – We are committed to environmental and scientific excellence. We will meet or exceed the needs and expectations of our customers. Our employees are encouraged to seek creative and innovative solutions and to continuously find ways to improve what we do.

TEAMWORK – We work as a team to accomplish our missions. We regard all concerned parties as essential members of the team and value and plan for their participation. "Win-Win" solutions are essential elements of the way we do business. We value the diversity of our employees and all other members of the team.

INTEGRITY – We conduct ourselves with the highest standards of professionalism and ethical behavior. We honor our commitments and comply with applicable laws and regulations. We are proper stewards of the taxpayers' interest.

REQUIREMENTS FOR PROGRAM SERVICES

The major requirements for the Program services are described in the following sections. Although the specific quantities of waste and levels of service are subject to change, this information is provided to support the overall strategies. The Program services are expected to be required until the planned Hanford Site closure in fiscal year (FY) 2046.

The Program scope currently does not include high-level tank waste, sanitary waste, or waste that is the responsibility of the ER Program. The latter includes radioactive waste buried before 1970 and waste buried outside the 200 Area between 1944 and 1974.

Solid Waste

Since 1944, the Hanford Site has disposed of 660,000 m^3 of solid low-level waste (LLW).

Figure 1. Low-Level Burial Grounds.

The Program is forecasted to receive 98,000 m^3 of LLW for disposal in the Low-Level Burial Grounds (LLBG) (Fig.1) through FY 2046. This quantity represents about 19% of future DOE generated LLW (Of this forecasted volume, 30,000 m^3 is from off-site generators.)

Through January 2001, the Program has disposed of 94 defueled Naval reactor compartments in the LLBG. The Program is forecast to receive eight to nine defueled reactor compartments per year through FY 2013 (Fig. 2).

Figure 2. Defueled Naval Reactor Compartment Transport.

Solid mixed low-level waste (MLLW) includes Land Disposal Restriction (LDR) solids, inorganic solids, debris, lead, organics & lab packs, Radioisotopic Thermal Generators (RTG's), mercury, long-length equipment, spent melters, remote-handled (RH) and oversized MLLW, and Greater Than Category III (GTC III) MLLW. The Program has 7,700 m^3, or about 26% of the MLLW in storage at DOE sites. The Program plans to receive 61,000 m^3 from onsite generators, or about 52% of DOE's newly generated MLLW. In addition, 200 m^3 of waste is projected to be received from the Hanford ER Program and off-site generators with approved Federal Facility Consent Agreement site treatment plans, for treatment and return to the generators. Volumes of off-site waste receipts will be affected when the LLW/MLLW Records of Decision are issued as part of the Hanford SW EIS process.

Of the transuranic (TRU) waste stored at DOE sites, the Program has approximately 15% (16,000 m^3) of the contact-handled (CH) and 10% (200 m^3) of RH TRU waste. This includes 15,000 m^3 of suspect TRU waste in retrievable

storage. The Waste Management Program is projected to receive from onsite generators 10% (16,000 m^3) of the CH and 22% (1,000 m^3) of the newly generated RH TRU waste.

Liquid Waste

Requirements for 200 Area liquid effluent treatment services (Fig. 3) are forecasted for FY 2001 through FY 2003 at approximately 102 million L (27 million gal) per year. This assumes that pump-and-treat processing of 200-UP-1 groundwater continues through FY 2003. Liquid effluents from the Office of River Protection (ORP) Waste Treatment Plant (WTP) will require treatment. This treatment includes effluents from plant startup and operations, which are expected to begin in FY 2007. Additional treatment needs may arise with expanded vadose zone activities and requirements.

Figure 3. Effluent Treatment.

Disposal via the Treated Effluent Disposal Facility (TEDF) of 200 Area liquid effluents meeting discharge requirements are forecast at 570 million L (150 million gal) for FY 2001. These levels will continue until startup of the ORP WTP operations when requirements will increase to 870 million L (230 million gal) . Facilities generating waste streams include the Plutonium Finishing Plant (PFP), 222-S Laboratory Complex, 242-A Evaporator, T Plant and the Waste Encapsulation and Storage Facility (WESF).

Requirements for ORP tank waste concentration services are forecast from 3.5 to 7.5 million L (1 to 2 million gal) per year for FY 2002 through FY 2012. Major feed sources are salt-well liquor and dilute noncomplexed tank waste.

FACILITIES AND CAPABILITIES

The major Hanford Waste Management Program facilities and capabilities that will be used to meet the Program needs are described in Appendix B. Categories include solid waste treatment/processing, storage, and disposal; liquid waste; and cesium and strontium capsules.

STRATEGIC GOALS

This 2001 Strategic Plan identifies current and projected needs for Waste Management Program services in support of Hanford Site cleanup, and identifies strategies and actions to meet the needs. The plan defines three strategic goals: (1) waste treatment/processing, storage and disposal; (2) effective interfaces; and (3) program excellence. The plan reflects the national goals, objectives, and strategies presented in the FY 2001 U. S. Department of Energy Strategic Plan (Fig. 4). The Waste Management Program Strategic Plan also supports the DOE-RL outcomes strategy for the Hanford Site and the "Hanford 2012" vision.

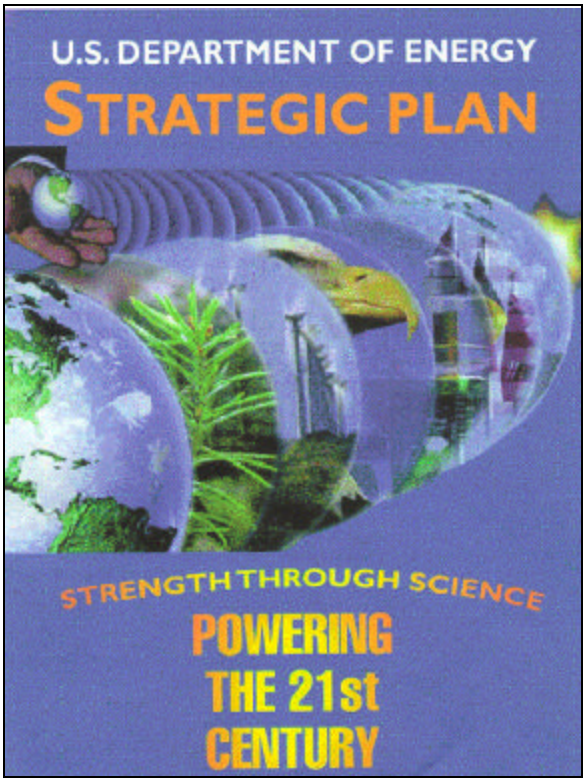


Figure 4. FY 2001 U.S. Department of Energy Strategic Plan.

The plan is designed to provide the framework for waste management over the lifetime of the Hanford cleanup mission. Near-term strategies and actions are integrated with the Waste Management Program budget submittals.

WASTE TREATMENT, PROCESSING, STORAGE, AND DISPOSAL

The Waste Treatment/Processing, Storage, and Disposal Strategic Goal addresses six objectives, each covering a major waste type: low-level waste, mixed low-level waste, contact-handled transuranic waste, remote-handled transuranic waste, liquid waste, and cesium and strontium capsules. Under each objective overall TSD strategies are discussed, along with stream specific strategies, external drivers, and requirements for new technology. Draft Strategic Plan Master Logic Charts for each type of waste are provided in the Attachment.

OBJECTIVE 1

Dispose of low-level solid waste.

Storage and Disposal Strategies

1. Manage LLW generated by onsite generators (excluding waste disposal at the Environmental Restoration Disposal Facility) and DOE approved off-site generators for disposal in the 200 Area active LLBG. Maintain the Hanford Site Solid Waste Acceptance Criteria (HSSWAC-see http://www.hanford.gov/wastemgt/wac/index.htm); utilize the Solid Waste Information Forecasting Tool (SWIFT - Solid Waste Forecast 2001.0 - metrics derived from SWIFT are provided in Appendix C); maintain the Hanford generator waste disposition maps; perform acceptance and verification, and support transportation of the waste from the generator to TSD; ensure that LLW received meets the HSSWAC; provide storage of existing LLW that requires treatment, treat the inventory as required, and dispose in the active LLBG.

- *Newly generated LLW volume projections are provided in Figure 5 (Note: LLW disposal volumes are greater than receipt volumes).*

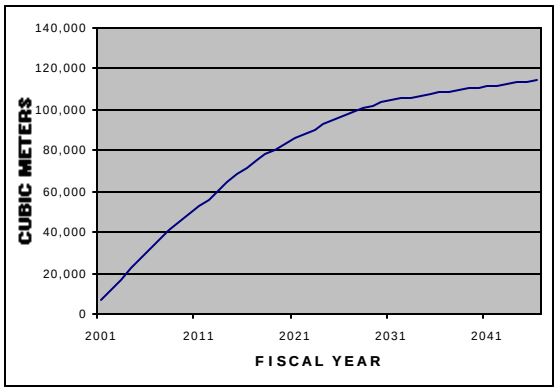


Figure 5. Cumulative Low-Level Waste Volumes Projected for Disposal in the Hanford Site LLBG.

2. Utilize two performance assessments (one for 200 East Area and one for 200 West Area) for the active LLBG to demonstrate compliance with performance objectives in DOE 435.1. The performance assessments, along with a site-wide composite analysis, will be maintained and updated throughout LLBG operations. The performance assessments are reflected in the Waste Acceptance Criteria. An integral part of evaluating disposal facility performance is achieved through environmental monitoring. Monitoring at the disposal facility should demonstrate to the regulators and stakeholders that waste is being disposed of in a safe and regulatory compliant manner.

3. Transition LLBG operations to Site Stewardship in FY 2046.

4. Perform treatment, storage and disposal (TSD) functions in a cost-effective manner, using commercial approaches and practices

where possible.

5. Complete a LLW disposal options analysis and initiate implementation of the recommended actions by the end of March 2003. The LLW disposal analysis will evaluate the LLW configuration in consideration of the SW EIS ROD, Canyon Disposition Initiative (CDI), and Nevada Test Site (NTS)/RL cooperative strategy. Alternatives may include a new LLBG deep trench configuration, use of U Plant canyon for LLW disposal, and upgrade and use of the Hanford rail system.

6. Other DOE sites' needs for Hanford services are to be provided on a cost-reimbursement basis with the generation site paying for incremental costs.

- *Support the DOE-EM integration effort (EM Integration or EMI) to accelerate cleanup at all sites and to reduce total closure/disposal costs for the DOE Complex (Fig. 6). The national disposition maps are available on http://emi-web.inel.gov/dmaps2000.html).*

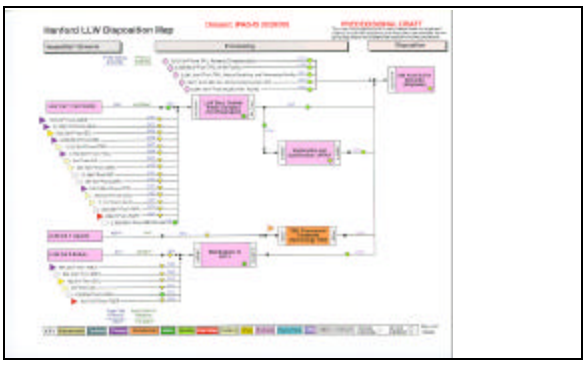


Figure 6. Hanford Low-Level Waste Baseline National Disposition Map.

7. Develop a cooperative strategy for the DOE Complex LLW/MLLW with the NTS by the end of FY 2001. The strategy prepared by DOE will assume that operation and viability of both sites is maintained. The strategy will address volumes, generators, waste forms (bulk versus packaged, rail versus truck), etc. Confirm and update this cooperative strategy after completion of the LLW disposal analysis.

8. Keep the Hanford rail system as an option until the SW EIS ROD is released by DOE. The Hanford railroad will remain viable for "reactivation" with "minor" upgrades/repairs required through at least FY 2002. Any use of the rail system will be coordinated with the DOE-RL Office of Site Services.

9. Provide additional disposal capacity based on forecasted needs.

10. Minimize the disposal areas requiring closure.

Stream Specific Strategies

Category I LLW

Provide direct burial of Category I LLW in trenches through FY 2046 (Fig. 7). Continue to receive and dispose in trenches, on the Hanford Site, Category I LLW from other approved DOE sites and federal agencies.

Figure 7. Burying Low-Level Waste.

Category III LLW

Continue to receive and dispose in trenches, on

the Hanford Site, Category III LLW from Hanford projects and programs, and from other approved DOE sites and federal agencies. Stabilize Category III LLW (Fig. 8) before burial in the LLBG.

Figure 8. Stabilization of Category III LLW using grout.

Other LLW

Continue storage of LLW that does not meet the HSSWAC. A decision on disposition is planned by the end of FY 2006. Complete disposition by the end of FY 2008 (Note: This task is not funded). Review on a case-by-case basis any other LLW requests for acceptance for disposal.

External Drivers

1. The Solid Waste Environmental Impact Statement (SW EIS) Record of Decision ROD (planned to be issued by the end of FY 2002) may define what LLW can be disposed at Hanford.

2. The Waste Management Programmatic EIS ROD (WM PEIS ROD) for the DOE Complex will continue to affect the level of Hanford services provided for other DOE sites.

3. The CDI U Plant ROD (planned to be issued by the end of March 2002) will determine whether additional LLW will be disposed of in U Plant.

Technology Inputs

None.

OBJECTIVE 2

Store, treat, and dispose of mixed low-level waste.

Treatment, Storage and Disposal Strategies

1. The Program will manage all MLLW generated by the FH Projects, DOE MLLW produced by Pacific Northwest National Laboratory (PNNL), and, as requested, MLLW produced by the ER Program and the ORP. The current inventory of MLLW will continue to be stored primarily in CWC. The strategy is to dispose of LDR compliant MLLW in the Mixed Waste Disposal Units. After treatment, a volume increase or decrease could occur for disposal of a specific waste stream. The Waste Management Program will maintain the Hanford Site Solid Waste Acceptance Criteria; perform acceptance and verification, and support transportation of the waste from the generator to TSD; provide approved storage and treatment as required, and final disposal.

2. Treat and/or dispose of a minimum of 7,795 m^3 of MLLW by the end of June 2006. Thermally treat a minimum of 600 m^3 of MLLW by the end of December 2005. As a stretch objective treat and/or dispose of an additional 2,025 m^3 of MLLW by the end of June 2006.

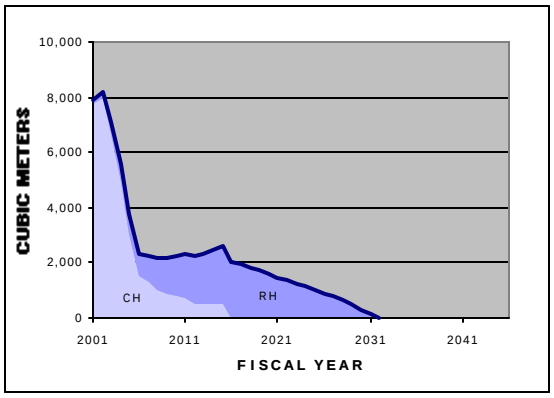


Figure 9. Mixed Low-Level Waste in Storage at the Central Waste Complex.

3. Manage the Central Waste Complex (CWC) to provide waste storage within the existing capacity (Fig. 9). The usable capacity will vary with the mix of storage containers and waste matrices. Reduce the legacy CH MLLW storage to be current by FY 2014.

- *CWC waste storage for the various types of projected waste is illustrated in Figure 10.*

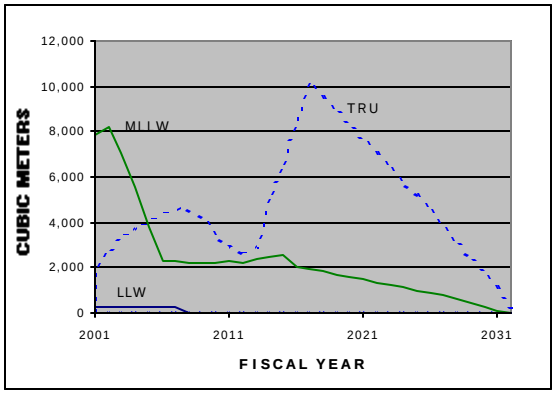


Figure 10. Projected CWC Waste Storage.

4. Perform TSD functions cost effectively.

- *Continue to support the Mixed Waste Focus Area, which is a multi-site effort to provide technical and engineering solutions to national waste management problems.*

- *Select cost effective treatment alternatives.*

5. Utilize the M-91 T Plant complex decontamination, treatment, verification, and certification capabilities and contract with companies that have unique capabilities for treatment of MLLW including thermal and non-thermal treatment, on a case by case basis.

6. Dispose of MLLW in the Mixed Waste Disposal Units.

- *Projected MLLW disposal is shown in Figure 11.*

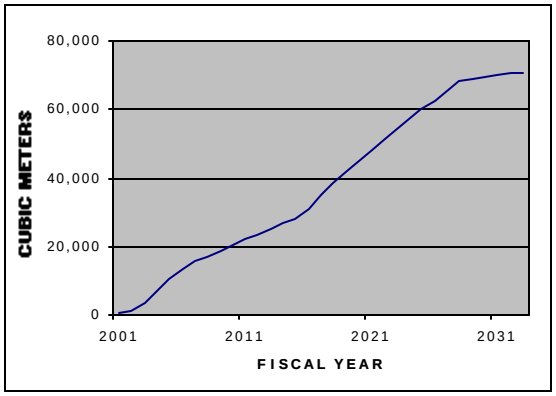


Figure 11. Projected Cumulative Mixed Low-Level Waste Disposal on the Hanford Site.

- *Complete a Site-wide MLLW disposal options study by the end of FY 2001. The study should address MLLW, CDI, Immobilized Low Activity Waste (ILAW), and ORP WTP spent melters.* (Note: This task is not funded)

- *Expand MLLW disposal capacity as needed.*

  - Current Mixed Waste Disposal Units each have a maximum air-space volume of 24,000 m^3 for disposal.

  - The current MLLW Disposal Unit in use is 218-W5 Trench 34.

  - The next MLLW Disposal Unit to be

placed in operation is 218-W-5 Trench 31, planned for FY 2004.

- *The site-wide MLLW disposal options study will determine a revised loading strategy for the current Mixed Waste Disposal Units and a revised strategy for the construction of a new disposal unit; complete design and construction by FY 2005. Operation of the follow-on disposal unit to support the ORP WTP would then be required in FY 2006.* *(Note: This task is not funded)*

- *Receive treated waste from other DOE sites and federal agencies as directed by DOE. Support is to be provided on a cost-reimbursement basis with the generating site paying all incremental costs.*

7. Support closure of the Mixed Waste Disposal Units by design and placement of covers.

8. Continue to examine capabilities at other DOE sites that Hanford could use. The Hanford Waste Management Program will continue to support integration of these capabilities to accelerate cleanup and to reduce total DOE Complex treatment and disposal costs.

9. By the end of FY 2014, transition to having generators treat MLLW prior to transfer to waste management for disposal. The Waste Management Program will work with generators on treatment alternatives.

10. Develop capability to transport drummed quantities of Type A liquid MLLW. Streams affected are Inorganics and Organic & Lab Packs. (Note: This task is not funded)

11. Develop a cooperative strategy for the DOE Complex LLW/MLLW with the NTS by the end of FY 2001. The strategy prepared by DOE will assume that operation and viability of both sites is maintained. The strategy will address volumes, generators, waste forms (bulk vs packaged, rail vs truck), etc. Confirm and update this cooperative strategy after completion of the LLW disposal analysis and the site-wide MLLW disposal option study.

Stream Specific Strategies

Mixed low-level waste streams are separated by treatment/disposal categories. Treatment/disposal categories include: direct disposal, non-thermal treatment, thermal treatment, unique wastes, oversized CH MLLW and RH MLLW.

Direct Disposal

183-H Solidified Liquids

Proceed with disposition of 183-H solar evaporation basin solidified liquids after regulator approval of the ETF delisting petition (assumed to be FY 2002). Store solidified liquids pending disposal authorization by FY 2003. Dispose of this waste in FY 2004.

Other LDR Compliant

Dispose of other LDR compliant waste from FY 2003 to FY 2005.

Long Length Equipment

Starting in FY 2005 receive treated long-length equipment from ORP ready for disposal in the Mixed Waste Disposal Units. Dispose of long length equipment as required.

Spent Melters

Complete readiness activities to receive and dispose of spent melters from ORP WTP by the first quarter of FY 2006. ORP will fund construction of the LLBG trench and disposal operations.

Newly Generated

Store and dispose of newly generated waste through FY 2014. After FY 2014 receive treated (LDR compliant) MLLW from generators for disposal. Generators have the option to use FH commercial treatment contracts.

Non-Thermal Treatment

Inorganics, Debris

Continue non-thermal treatment (Fig. 12) of heterogeneous debris (e.g. metal) for disposal in the Hanford Site Mixed Waste Disposal Units.

Figure 12. ATG, Inc. In-barrel Compaction.

Determine whether to continue treatment commercially (including DOE complex Broad Spectrum Contracts) or treat onsite.

183-H Inorganic Salts, Sludges and Debris

Continue to store inorganic salts, sludges and debris. Initiate treatment and disposal in FY 2003.

Thermal Treatment

Organics & Lab Packs

Disposition organics and lab packs.

- *Initiate thermal treatment in FY 2001.*
- *Treat organics and lab packs starting in FY 2001 using an off-site commercial contract. Continue treatment to support newly generated waste.*
- *A new thermal treatment contract for services needs to be in place in FY 2011.*

Unique Wastes

Lead

Disposition waste containing radioactive lead solids.

- *Continue to store radioactive lead solids in CWC until substantial treatment capability/capacity is available. Treat lead inventory using a macroencapsulation process. Selection of where this MLLW will be treated is to be determined and will be coordinated with the EM integration effort.*
- *Continue to treat newly generated radioactive lead solids as required.*

Mercury

Disposition waste containing radioactively contaminated mercury.

- *Continue to store radioactively*

contaminated mercury in CWC until treatment capability/capacity is available (assumed to be FY 2006). Treat mercury inventory after FY 2006. Selection of where this MLLW will be treated is to be determined and will be coordinated with the EM integration effort.

- *Continue to treat newly generated radioactively contaminated mercury as required.*

GTC III (RTGs)

Provide capability as required to store GTC III in CWC on a case-by-case basis. Treat and/or dispose of GTC III (including RTG's) as required in the Mixed Waste Disposal Units or LLBG trenches.

Oversized Contact-Handled MLLW and Remote-Handled MLLW

Store oversized CH MLLW and RH MLLW in CWC and the burial grounds and utilize the M-91 treatment capability/capacity. The M-91 capability includes the existing T Plant Complex, commercial contracts, and additional capabilities, if any, that will be defined by the end of FY 2007.

- *Complete readiness activities for any additional capabilities (assumed to be by FY 2015).*
- *After M-91 readiness activates are complete, treat the MLLW and dispose of treatment residues in the Mixed Waste Disposal Units beginning in FY 2016.*

Defueled Naval Reactor Compartments

Provide coordination and support services for the receipt, transport, and disposal of defueled Naval reactor compartments in Trench 94.

- *Dispose of defueled Naval reactor compartments through FY 2017.*
- *Complete a trench expansion study in FY 2003*

External Drivers

1. Tri-Party Agreement (Hanford Federal Facility Agreement and Consent Order) - see Appendix E for applicable TPA Milestones
2. The SW EIS ROD (planned to be issued by the end of FY 2002) may redefine what MLLW can be disposed at Hanford.
3. The WM PEIS ROD for the DOE Complex will continue to affect other DOE sites' needs for Hanford services.
4. The EM integration effort will assist the Waste Management Program in determining treatment and disposal alternatives for waste streams such as lead and mercury.
5. The approval by the regulators of the delisting petition for ETF (assumed by the end of FY 2002) provides for disposal of currently stored waste with other listed waste codes.
6. The Hanford LDR report scope could impact the cost, schedule and quantity of MLLW to treat and dispose.
7. Receipt of off-site MLLW for disposal at Hanford may be affected by State of Washington equity issues. All off-site MLLW is assumed to be LDR compliant upon arrival at Hanford for direct disposal.

Technology Inputs

None.

OBJECTIVE 3

Provide storage, retrieval, processing, and preparation of CH TRU waste for shipment to WIPP.

Processing, Storage and Disposal Strategies

1. Manage CH TRU waste produced by DOE projects and programs for characterization, certification, processing, and packaging to a final form ready for shipment to WIPP. Maintain centralized management and integration of all Hanford Site TRU waste in accordance with the requirements of the WIPP waste acceptance criteria.

2. Use WRAP and the M-91 capability to support Hanford CH TRU waste cleanup requirements. The M-91 capability includes the existing T Plant Complex and additional capabilities, if any, that will be defined by the end of FY 2007. Alternatives include modification of T Plant and/or construction of new facilities. If necessary, complete construction of additional M-91 processing capability for TRU by the end of FY 2011; operation in FY 2013.

3. Use WRAP and the M-91 capability to support cleanup requirements of the DOE Complex, with consideration of State of Washington equity issues. This support would be provided on a cost-reimbursement basis with the generating site paying for incremental costs, as is now the case for disposal of LLW from off-site generators.

4. Plan and schedule CH TRU waste processing and shipment so that no additional permitted storage is required. Stage retrieved waste in the LLBG as necessary to manage the CWC inventory. The CH TRU waste inventory will be used to balance WRAP throughput needs considering retrieval and newly generated rates.

5. Process stored, retrieved, and newly generated CH TRU waste at WRAP through FY 2032. Certify waste for shipment (via TRUPACT II) to WIPP in support of the National TRU Waste Program Office (Fig. 13). Figure 14 shows the quantity of certified CH TRU waste projected to be shipped to WIPP.

Figure 13. TRUPACT II Loading Process at WRAP.

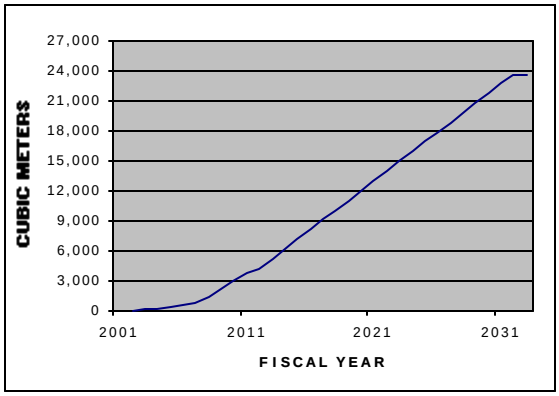


Figure 14. CH TRU Waste Projected to be Shipped to WIPP.

6. Certify for shipment to WIPP a minimum of 400 m^3 of TRU by the end of FY 2006. Complete 48 shipments to WIPP by the end of FY 2006. As a stretch objective certify shipment an additional 180 m^3 of TRU by

the end of FY 2006. As a stretch objective complete an additional 20 shipments to WIPP by the end of FY 2006.

7. Establish a TRU retrieval plan incorporating the Data Quality Objectives process by March 31, 2002. Modify and finalize the plan by the end of FY 2005 as required for consistency with the issued SW EIS ROD and information gathered from test digs of drums of different ages.

8. Retrieve a minimum of 11,700 suspect TRU drums by the end of FY 2006. As a stretch objective retrieve an additional 3,500 drums by the end of FY 2006.

9. Test digs of suspect TRU waste drums stored in the burial grounds will examine each storage configuration of drums in-place. Drums will be further examined if practical. Drums containing high Pu^{239} content may be removed as part of the test digs if practical. (Note: This task is not funded)

10. The initial TRU retrieval plan will assume that all CH TRU waste is retrieved and sent to WIPP. The Solid Waste EIS ROD may change this assumption.

11. All Pre-1970 waste will be dispositioned through the CERCLA process.

12. The initial TRU retrieval plan will assume that no test dig is needed for suspect CH TRU waste drums generated from FY 1981 to FY 1988.

13. Suspect TRU that is determined to be LLW will remain in the burial grounds. Fifty percent of the suspect TRU is now assumed to be LLW.

14. CH TRU waste generated after FY 2032 is processed at the generator's location.

15. Retrieved 618-10/11 burial grounds waste will be "lag" stored at the clean-up site as appropriate pending processing/disposal.

16. Utilize information from the Carlsbad Field Office TRU Large Container Study (FY 2002) and Rail Shipment Study (FY 2002) to optimize packaging and shipping approaches.

17. Complete WIPP certification (for TRU waste solids) of Hanford sampling and analytical laboratories in support of the PFP and other onsite TRU waste generators by the end of FY 2006. (Note: This task is not funded)

Stream Specific Strategies

TRU Waste Stored at CWC

Continue to store CH TRU waste (Drums, boxes/other containers and PCB contaminated waste) in CWC pending processing. CWC will remain open to store waste until completion of the Hanford EM mission.

- TRU waste will be sent to WRAP for processing/certification, through FY 2032, and shipped to WIPP by 2035.

- Boxes will be processed using the M-91 capability.

- TRU waste contaminated with PCB's above 50 ppm will be stored at CWC pending the determination on the acceptability of PCB waste at WIPP.

TRU Waste Stored in the Burial Grounds

Continue to store post-1970 suspect CH TRU waste in the LLBG pending retrieval and the SW EIS ROD.

- Revise the authorization basis and procedures for test digs and covered TRU

waste retrieval by the end of FY 2002. This revision will be consistent with the SW EIS ROD and the TRU Retrieval Plan. (Note: This task is not fully funded)

- Initiate retrieval of 1981-1988 drums in FY 2003.
- Complete a test dig of 1973-1975 drums to determine the viability of the retrieval plan by the end of FY 2003. (Note: This task is not funded)
- Update the authorization basis as necessary to be consistent with the TRU retrieval plan through FY 2005.
- If the test dig of the 1973-1975 drums successfully demonstrates the viability of the TRU retrieval plan then conduct a test dig of 1970-1972 drums by the end of FY 2004. If the test dig of 1970-1972 drums successfully demonstrates the viability of the TRU retrieval plan then proceed with retrieval per the plan. (Note: This task is not funded)
- If the test dig of the 1973-1975 drums does not successfully demonstrate the viability of the TRU retrieval plan then conduct a test dig of 1976-1980 drums by the end of FY 2004. (Note: This task is not funded)
- If any of the test digs does not demonstrate the viability of the TRU retrieval plan then revise the plan by the end of FY 2005 and complete the deteriorated drum retrieval project by the end of FY 2014. (Note: This task is not funded)
- Complete retrieval of the 1970 through 1988 TRU drums by the end of FY 2014.
- Complete retrieval of all exposed drums in open storage by the end of FY 2001.
- Continue storage of boxes and other containers that can not be processed within existing facilities in the LLBG awaiting processing through the future M-91 processing capability starting in FY 2013.
- High content Pu^{238} drums (per the TRU Retrieval Plan) disposition remains to be determined.
- The Carlsbad Field Office will determine the disposition of other (classified) Hanford CH TRU waste by FY 2005.

241-Z-361 Tank

241-Z-361 tank waste receipt will begin at the start of FY 2006. The CH TRU waste will be stored in CWC pending processing through WRAP.

Newly Generated

Store newly generated CH TRU waste at CWC and send to WRAP or use the M-91 processing capability for processing/certification and shipment to WIPP.

Off-Site

Other DOE sites' needs for Hanford services will be consistent with the WM PEIS ROD.

618-10/11

If required, receive CH TRU waste from 618-10 for processing in WRAP or M-91. Waste receipts will be consistent with the CERCLA ROD and the engineering options study to be completed by the end of FY 2002. Retrieval is planned to be completed by the end of FY 2014. Provide input from the Oak Ridge culverts to the retrieval contractor as applicable.

If required, receive CH TRU waste from 618-11 for processing in WRAP or M-91. Waste receipts will be consistent with the CERCLA ROD and the engineering options study to be completed by the end of FY 2002. Retrieval is

planned to be completed by FY 2018. Utilize lessons learned from caissons retrieval and provide to the 618-11 retrieval contractor.

External Drivers

1. TPA Milestones

2. The Hanford Defense Waste EIS issued in December 1987 identifies the disposal of Hanford Defense High-Level, TRU and Tank Waste (DOE/EIS-0113).

3. The SW EIS ROD (planned to be issued by the end of FY 2002) may define the disposition plan for CH TRU waste.

4. The WM PEIS ROD for the DOE Complex will affect other DOE sites' needs for Hanford services.

5. The CDI U Plant ROD (planned to be issued by the end of March 2002) will determine the disposition of any TRU contaminated equipment in the U Plant canyon.

6. WIPP will operate through FY 2035.

7. The Nuclear Materials Integration group will examine possible uses for high Pu^{238} content waste drums. The Savannah River Site may take the Hanford Pu^{238} waste drums.

8. The Carlsbad Field Office will determine the disposition of other (classified) Hanford TRU waste. The disposition will either be to send this waste to an off-site facility for processing or to send the waste to WIPP for disposal.

9. A national policy decision will be required to determine disposition of Hanford CH TRU waste generated after the WRAP closure date of FY 2032 (note: the WIPP closure date is FY 2035) and the completion of the Hanford EM mission in FY 2046.

10. The 618-10/11 CERCLA ROD, planned to be issued in FY 2001, will determine the disposition of these burial grounds waste. 618-10/11 retrieval will be consistent with the Records of Decision. Waste will be certified by the Waste Management Program for disposal at WIPP.

11. The WIPP Toxic Substance Control Act (TSCA) disposal decision, planned for April 2005, will determine the acceptability of PCB waste at WIPP.

12. The Carlsbad Field Office TRU Large Container Study (FY 2002) and Rail Shipment Study (FY 2002) will be used to optimize packaging and shipping approaches.

Technology Inputs

None.

OBJECTIVE 4

Provide storage, retrieval, processing, and preparation of RH TRU waste for shipment to WIPP.

Processing, Storage and Disposal Strategies

1. Manage RH TRU waste produced by DOE projects and programs for certification, processing, and packaging to a final form ready for shipment to WIPP. Maintain centralized management and integration of all Hanford Site TRU waste in accordance with the requirements of the WIPP Waste Acceptance Criteria. The Carlsbad Field Office WIPP RH TRU Waste Analysis Plan must be issued to complete M-91 requirements. The existing WIPP permit only addresses CH TRU waste.

2. Use the M-91 capability to support Hanford RH TRU waste cleanup requirements. The M-91 capability includes the existing T Plant Complex and additional capabilities, if any, that will be defined by the end of FY 2007. Alternatives include modification of T Plant and/or construction of new facilities. M-91 is planned to be operated through FY 2032.

3. Use the M-91 capability to support cleanup requirements of the DOE Complex with consideration of State of Washington equity issues. This support could be provided on a cost-reimbursement basis with the generating site paying for all incremental costs, as is now the case for disposal of LLW from off-site generators.

4. Plan and schedule RH TRU waste processing and shipment so that no additional permitted storage is required. Stage RH TRU waste in the LLBG as necessary to manage the inventory. The RH TRU waste inventory will be used to balance M-91 throughput needs considering retrieval and newly generated rates.

5. Process stored, retrieved, and newly generated RH TRU waste at M-91 through FY 2032. Certify waste for shipment to WIPP in support of the National TRU Waste Program Office. Figure 15 shows the projected quantity of certified RH TRU waste shipped to WIPP.

6. Modify the retrieval plan to incorporate RH TRU waste. The modified plan will be consistent with the issued SW EIS ROD, information gathered from CH TRU waste retrieval, and results of the Oak Ridge culverts project by the end of FY 2011. The current assumption is that all RH TRU waste is retrieved.

7. If necessary, complete construction of additional M-91 processing capability for TRU waste by the end of FY 2011 and begin processing by FY 2013. Technology requirements for M-91 will be established and the M-91 Conceptual Design Report will determine whether additional capabilities are required.

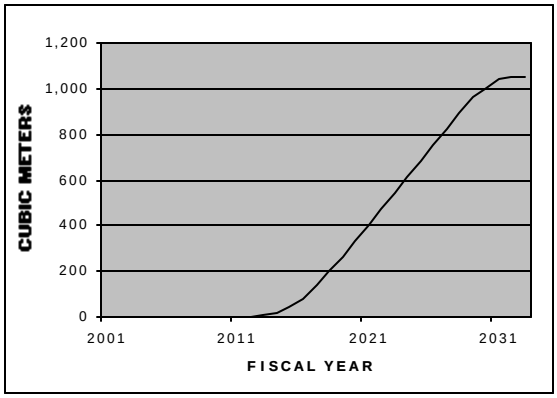


Figure 15. Remote-Handled TRU Waste Projected to be Shipped to WIPP.

8. Suspect TRU waste is determined to be LLW will remain in the burial grounds. Fifty percent of the suspect TRU waste is now assumed to be LLW.

9. RH TRU waste generated after FY 2032 is processed at the generators' location.

10. All Pre-1970 waste will be dispositioned through the CERCLA process.

11. Retrieved 618-10/11 burial grounds waste will be "lag" stored at the clean-up site as appropriate pending processing/disposal and delivered "just-in-time."

12. Complete cleaning of the necessary T Plant deck area and cells to ready the M-91 capability for receipt of RH TRU waste by the end of October 2002 (Includes clearing 10 canyon deck sections; clearing 8 canyon cells; and removing 4 large pieces of equipment from the canyon deck). Remove Shippingport fuel from T Plant by FY 2002. Evaluate and install sludge processing equipment as needed and complete final

preparations for receipt of K Basin pit sludge by the end of October 2002. Complete final preparations for receipt of K-Basin canister and fuel wash sludge by the end of February 2004.

13. Utilize information from Oak Ridge Melton Valley sludge processing (planned to be completed in FY 2003) and findings from the Mixed Waste Focus Area size reduction technology demonstration (planned to be completed in FY 2003) for processing and packaging of RH TRU at M-91.

14. Utilize information from the Carlsbad Field Office TRU Large Container Study (FY 2002) and Rail Shipment Study (FY 2002) to optimize packaging and shipping approaches.

15. Complete WIPP certification (for RH TRU waste solids) of Hanford sampling and analytical laboratories in support of onsite TRU waste generators by the end of FY 2013. (Note: This task is not funded)

Stream Specific Strategies

K Basins Sludge

Receive and store K Basin sludge at T Plant from FY 2003 to FY 2005. Continue to store the sludge until processing capability/capacity is available. It is assumed that at a minimum the sludge will require stabilization for 45 m^3 of floor and pit material. Five cubic meters of other sludge may require further processing.

RH TRU Stored at CWC

Continue to store RH TRU in CWC and initiate processing using the M-91 capability.

200 West Caissons

A Plan will be developed to retrieve the 200 West Caissons. The plan will use available lessons learned (Oak Ridge culverts project). Procure caissons retrieval equipment by FY 2014. Retrieval of TRU waste from the caissons (Fig. 16) will be completed by FY 2018. Transfer to M-91 will be on a "just-in-time" basis (no interim storage).

Figure 16. View inside a 200 West Caisson.

Newly Generated

Continue to store newly generated RH TRU waste in CWC awaiting M-91 processing.

TRU/Spent Fuel Stored in Burial Grounds

Continue to store post-1970 suspect RH TRU waste in the LLBG (Fig. 17) pending retrieval. Initiate retrieval of RH TRU waste in FY 2013 and process in M-91. Spent Fuel retrieved in FY 2013 from the LLBG will be sent to the CSB for repackaging and storage.

Figure 17. TRU waste stored in the burial grounds.

618-10/11

If required, receive RH TRU waste from 618-10 for processing in M-91. Waste receipts will be consistent with the CERCLA ROD and the engineering options study to be completed by the end of FY 2002. Retrieval is planned to be completed by the end of FY 2014. Utilize lessons learned from the Oak Ridge culverts to plan 618-10 actions as applicable.

If required, receive RH TRU waste from 618-11 for processing in M-91. Waste receipts will be consistent with the CERCLA ROD and the engineering options study to be completed by the end of FY 2002. Retrieval is planned to be completed by FY 2018. Utilize lessons learned from 200W caissons to plan 618-11 actions.

PUREX Tunnels

The PUREX/PUREX Tunnels ROD (TBD) and/or RCRA closure plan will determine the tunnels waste disposition.

Off-Site

Should Hanford waste services be required to support disposition off-site RH TRU waste to WIPP it will be consistent with the WM PEIS ROD.

External Drivers

1. TPA Milestones
2. The Hanford Defense Waste EIS issued in December 1987 identifies the disposal of Hanford Defense High-Level, TRU and Tank Waste (DOE/EIS-0113).
3. The SW EIS ROD (planned to be issued by the end of FY 2002) may redefine the disposition plans for RH TRU waste.
4. The WM PEIS ROD for the DOE Complex will affect other DOE sites' needs for Hanford services.
5. The CDI U Plant ROD (planned to be issued by the end of March 2002) will determine the disposition of any TRU contaminated equipment in the U Plant canyon.
6. WIPP will operate through FY 2035.
7. A national policy decision will be required to determine disposition of Hanford RH TRU waste generated after the M-91 closure date of FY 2032 (note: the WIPP closure date is FY 2035) and the completion of the Hanford EM mission in FY 2046.
8. The 618-10/11 CERCLA ROD, planned to be issued in FY 2001, will determine the disposition of these burial grounds waste. 618-10/11 retrieval will be consistent with the Records of Decision. Waste will be certified by the Waste Management Program for disposal at WIPP.
9. Issuance of the PUREX/PUREX Tunnels ROD (TBD) and/or RCRA closure plan will determine tunnel waste disposition.
10. Availability of the 72-B cask for transfer of RH TRU waste to WIPP is planned for FY 2002. We will continue to evaluate alternatives to increase transportation payload.

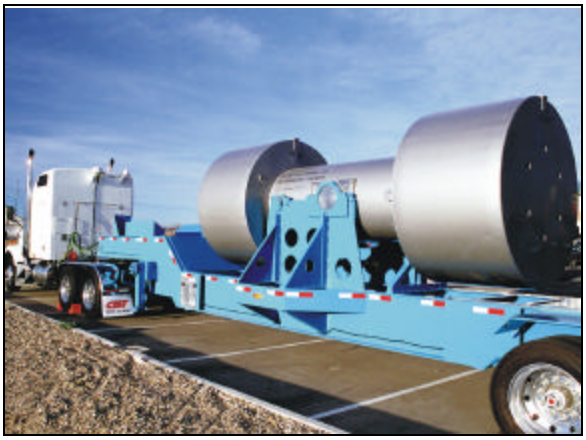


Figure 18. 72-B cask.

11. The Carlsbad Field Office TRU Large Container Study (FY 2002) and Rail Shipment Study (FY 2002) will be used to optimize packaging and shipping approaches.

12. The Carlsbad Field Office WIPP RH TRU Waste Analysis Plan must be issued to complete M-91 requirements. The existing WIPP permit only addresses CH TRU waste.

Technology Inputs

1. Issue alternative analysis/Project Management Plan (PMP) for retrieval of RH TRU waste stored in the LLBG by September 30, 2007.

2. Complete Alternative Analysis/PMP for retrieval of TRU caissons (200 West Area) by September 30, 2007.

3. Complete alternative Analysis/PMP for retrieval of spent nuclear fuel stored in the LLBG by September 30, 2012.

4. Deploy nondestructive assay capability developed through the Mixed Waste Focus Area for RH TRU.

OBJECTIVE 5

Provide liquid waste storage, treatment, and disposal services.

Treatment, Storage and Disposal Strategies

1. The Liquid Effluent Retention Facility (LERF), Effluent Treatment Facility (ETF), and 200 Area TEDF will be operated to meet customer needs, including new requirements set by the ORP WTP. Projects to provide needed facility upgrades and extend facility life will be evaluated and implemented as needed. Preparations for receiving the liquid waste from the ORP WTP will be funded separately by ORP. No additional cost will be accrued at LERF/ETF/TEDF as a result of the DST's becoming TSCA regulated. Appendix D provides the liquid waste forecast for the 200 Area ETF and 200 Area TEDF.

- *Provide temporary storage of liquid effluents in the LERF pending routing to the ETF.*

  - Complete LERF Life Extension Upgrade Project in FY 2015 (LERF has a 20-year design life).

  - Complete operations of LERF by the end of FY 2031. Complete cleanout of LERF by the end of FY 2032. By 2033 transfer LERF to facilitate deactivation.

- *Treat low-level liquid effluents in the 200 Area ETF on a campaign basis to allow discharge to the state-approved land disposal site (Fig. 19).*

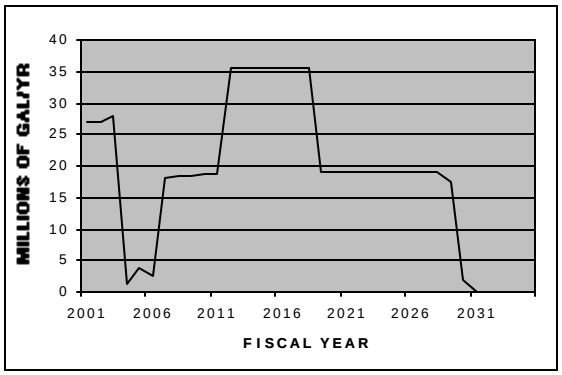


Figure 19. Projected Volume of 200 Area Liquid Effluent Treated.

- Accommodate new sources of feed, from both onsite and off-site customers.

- The approval by the regulators of the delisting petition for ETF (assumed by FY 2002) provides for disposal of currently stored waste with other listed waste codes.

- Modifications to the ETF waste solidification system may be required based on the expected composition and volume of the WTP radioactive liquid waste stream.

- Continue to use campaign plans to optimize costs and maintain operability during periods of low throughput. Planning will consider reduction of facility support, sharing of staff with other onsite activities or facilities (i.e. 200 ETF and evaporator operation), and constraints such as maintaining minimum flows needed to support operability.

- Complete operations of ETF by the end of FY 2031. Complete cleanout of ETF by the end of FY 2032. By 2033 transfer ETF to facilitate deactivation.

- *Maintain operations of the 200 Area TEDF through FY 2035 for collection and disposal of effluents that meet disposal requirements. (Fig. 20). A life extension upgrade project is planned for FY 2010.*

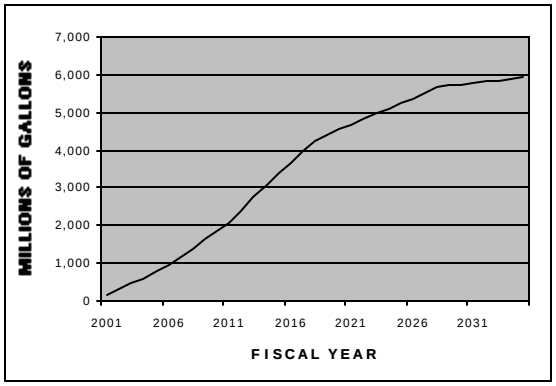


Figure 20. Projected Volumes of Liquid Effluents to the 200 Area Treated Effluent Disposal Facility.

2. Operate the 242-A Evaporator on a campaign basis to concentrate high-level tank waste as required by ORP. One to two campaigns per year are projected by ORP for the evaporator. Operation of the 242-A Evaporator will continue through FY 2018. Complete cleanout of the evaporator by the end of FY 2019. By 2020 transfer the evaporator to facilitate deactivation. An engineering study is underway to determine the role of the evaporator in supporting the WTP. The outcome of this study could significantly affect plans to upgrade or replace the condenser in FY 2004, and could extend the operating period of the evaporator. Preparations for receiving the liquid waste from the ORP WTP will be funded separately by ORP. No additional cost will be accrued at the Evaporator as a result of the DST's becoming TSCA regulated.

3. Provide integrated liquid effluent management to support cleanup of the Hanford Site. Assist the generators in disposing of their liquid effluents by defining the waste acceptance criteria, performing treatability evaluations, and identifying requirements.

- *Manage the miscellaneous streams to maintain the permits and ensure that the requirements of the discharge permits are met. Miscellaneous streams include wastewater from hydro-testing, maintenance and construction activities, cooling water and condensate discharges, and storm water run-off.*

- *Prepare biennial tritium treatment technology report. Issue the next report by August 2001*

Stream Specific Strategies

200 UP-1 Groundwater

Process 200-UP-1 groundwater in LERF/ETF through FY 2003.

K Basins Water

Process K Basins water in LERF/ETF through FY 2006.

242-A Evaporator Process Condensate

Process 242-A Evaporator process condensate in LERF/ETF through FY 2018.

ERDF Leachate

Process ERDF leachate in LERF/ETF through FY 2031. Processing of leachate after FY 2031 is TBD.

Mixed Waste Disposal Units Leachate

Process Mixed Waste Disposal Units leachate through FY 2031.

Groundwater Monitoring Purge Water

Process groundwater monitoring purge water in LERF/ETF through FY 2031.

ORP WTP Phase I Radioactive Liquid Effluent

Prepare ETF by August 2003 to receive ORP WTP Phase I radioactive liquid effluent. Process the Phase I radioactive liquid effluent in LERF/ETF through FY 2018.

ORP WTP Phase II Radioactive Liquid Effluent

Prepare ETF by FY 2012 to receive ORP WTP Phase II radioactive liquid effluent. Process the Phase II radioactive liquid effluent in LERF/ETF through FY 2031.

Melter Trench Leachate

Prepare to receive melter trench leachate by FY 2006 (Note: This task is not funded) and process in LERF/ETF through FY 2031.

WESF Pool Cell Water

Process WESF pool cell water through LERF/ETF in FY 2019.

T Plant Wastewater

Receive T Plant Wastewater in 200 Area TEDF through FY 2035.

PFP Wastewater

Receive PFP Wastewater in 200 Area TEDF through FY 2014.

WESF Wastewater

Receive WESF Wastewater in 200 Area TEDF through FY 2019.

222-S Laboratory Wastewater

Receive 222-S Laboratory Wastewater in 200 Area TEDF through FY 2035.

ORP WTP Phase I Non-Radioactive Liquid Effluent

Prepare TEDF by August 2003 to receive ORP WTP Phase I non-radioactive liquid effluent. Receive the Phase I non-radioactive liquid effluent in TEDF from FY 2007 through FY 2018.

ORP WTP Phase II Non-Radioactive Liquid Effluent

Prepare TEDF by FY 2011 to receive ORP WTP Phase II non-radioactive liquid effluent. Receive the Phase II non-radioactive liquid effluent in TEDF through FY 2035.

External Drivers

1. TPA Milestones

2. The approval by EPA of the delisting petition for ETF (assumed by FY 2002) provides for disposal of currently stored waste with other listed waste codes.

Technology Inputs

1. Complete biennial tritium treatment technology evaluation report (TPA milestone M-26-05). The next report is scheduled to be issued by the end of August 2001.

OBJECTIVE 6

Provide cesium and strontium capsule storage services.

Treatment, Storage and Disposal Strategies

1. The WESF will be operated for the safe storage of cesium and strontium capsules until the capsules are transferred to the ORP WTP. Cleanout of the facility will be completed in FY 2019. By 2020 transfer WESF for deactivation.

Stream Specific Strategies

Cesium and Strontium Capsules

1. Safety store the cesium and strontium capsules at WESF until the capsules are transferred to the ORP WTP for vitrification and disposal. ORP will fund for capsule transfer. The transfer is planned to start in FY 2013 and be complete at the end of FY 2017. The Waste Management Program will be responsible for packaging and shipping the capsules from WESF to the ORP WTP.

External Drivers

1. ORP WTP operations will enable acceptance of cesium and strontium capsules in FY 2011.

Technology Inputs

None.

INTERFACES

OBJECTIVE 1

Provide responsive and effective interfaces with customers and stakeholders.

Achievement of the Waste Management Program goals and objectives requires close working relationships and coordinated planning among DOE-RL, ORP, and the site contractors. Effective working relationships also must be maintained with DOE-HQ, other DOE sites, regulators, state and local governments, the Hanford Advisory Board, Tribal Nations, private industry, and Congress.

Stakeholders actively participate in the development and review of the SW EIS and the Waste Management PEIS. Decisions arising from the EIS process are important in determining the direction and scope of waste management activities at Hanford.

It is especially important to recognize the complementary role that other Hanford Site entities play in the waste management efforts. The interplay between environment, science, and economics establishes links among FH, PNNL, ERC, and the ORP contractors. Interfaces are formalized by written agreements as needed, e.g. the WTP Interface Control Documents established between Fluor Hanford and ORP contractors. In addition, our waste management services foster close relationships with many external DOE and U. S. Department of Defense programs.

On a national scale, the Waste Management Program will continue to actively participate in the Environmental Management integration effort. Implementation of the identified actions can increase utilization of Hanford Site capabilities, resulting in higher efficiency, and has the potential for near-term decreases in onsite radionuclide inventories.

OBJECTIVE 2

Provide responsive and cost-effective waste services.

Waste Management Program will provide full-range waste management support to waste generators, through the FH Waste Services organization. Services include characterization, acceptance, verification, packaging, and transport of waste from the generating facility to Waste Management TSD facilities. In addition, services are identified for placing and maintaining contracts with off-site vendors such as hazardous waste contractors for hazardous waste disposal. Points of contact are designated for each organization or facility to coordinate waste management activities.

PROGRAM EXCELLENCE

OBJECTIVE 1

Use efficient management systems and apply resources effectively.

Achievement of Program goals and objectives requires the timely application of sufficient financial, human, infrastructure, and technical resources. Adjustments to current strategies may be necessary because of changes to the current baseline. Examples of potential adjustments include Tri-Party Agreement M-91 baseline, TRU waste retrieval and processing rates, and variations in solid and liquid waste receipts.

Maintain an efficient and productive workforce through the selection, development, and training of qualified personnel.

Develop and maintain a centralized information base for Waste Management Program services and on the capability, capacity, and availability of resources needed to meet customer requirements.

- *Update forecasts of customer requirements for solid and liquid waste storage, treatment/processing, and disposal. Use the Solid Waste Integrated Forecast Technical (SWIFT) Report as a centralized database for all onsite and off-site solid waste customers.*

- *Maintain Fact Sheets describing capabilities, capacities, and availability of Waste Management Program facilities and services.*

- *Identify Waste Management Program new technologies that can be applied to reduce costs or to improve waste treatment/processing, storage, and disposal operations.*

  - Issue annual forecasts of technology needs.

- *Increase availability and access to Program information by maintaining Waste Management WEB pages.*

Use the *Waste Management Program Strategic Plan* as a planning basis for budget development, including preparation of budget requests.

- *Revise the Strategic Plan annually to reflect the latest DOE strategic plan, The next revision to the Waste Management Program Strategic Plan is planned for Feb. 2002.*

OBJECTIVE 2

Reduce costs of Program operations and services.

Consolidate or close unneeded services and facilities, and extend useful life of required facilities.

Continue to emphasize effective utilization of the workforce, equipment and facilities.

Broaden the Waste Management Program customer base to improve efficiency and reduce the cost of operations and services.

OBJECTIVE 3

Improve operations and delivery of services.

Continue the use of campaign plans for the major waste processing activities. The potential for integrating individual plans will be explored

to identify opportunities to optimize the use of capabilities and capacities and to adjust resources to improve efficiencies.

OBJECTIVE 4
Support local diversification opportunities.

Use commercial contracting of services where cost savings can be realized. Local and minority procurement of goods and services will be emphasized consistent with DOE objectives.

- *Contracts in place to date include solid waste processing at the local facility of ATG, Inc.*

OBJECTIVE 5
Ensure the safety and health of our work force and the public.

Maintain the Integrated Safety Management System to ensure conformance with requirements and safe performance of work. Promote pervasive worker involvement and teaming with management to achieve a culture of safe work in a safe workplace, and instill safety as a value.

Maintain toxic chemical management, emergency planning, and radiological control as identified in action plans.

OBJECTIVE 6
Implement a Quality Improvement Plan for all Waste Management Program activities.

Strengthen management involvement in assessing and improving Program quality performance.

OBJECTIVE 7
Measure and evaluate performance to provide the basis for continuous improvement of Program management.

Use feedback from assessments and independent audits to address performance issues and to identify opportunities for improvement.

Apply metrics for tracking production levels (e. g., the TRU/WRAP run plan), facility utilization, safety performance, environmental compliance, and customer satisfaction for solid and liquid waste.

Benchmark waste management services costs against other DOE sites and commercial practices. (Note: This task is not funded)

APPENDIX A

GLOSSARY AND DEFINITION OF TERMS

Definition and explanation of the types of waste discussed in this plan are as follows:

- Low-Level Waste (LLW)

  LLW includes all radioactive waste not classified as high-level waste (HLW), transuranic (TRU) waste, or byproduct material.

- Mixed Low-Level Waste (MLLW)

  MLLW contains both low-level radioactive materials and low-level hazardous chemicals. The hazardous component of mixed waste has characteristics identified by any or all of the following statutes: the *Resource Conservation and Recovery Act of 1976*, as amended; the *Toxic Substances Control Act of 1976*, and state regulations.

- Transuranic (TRU) Waste

  TRU waste refers to radioactive waste that contains more than 100 nCi of alpha-emitting isotopes with atomic numbers greater than 92 and half-lives greater than 20 years per gram of waste.

Radioactive waste is divided further into two more categories dependent on surface dose rate of beta, gamma, and neutron radiation. These categories are referred to as contact-handled (CH) and remote-handled (RH) waste. Contact-handled packages are those with surface dose rates no greater than 200 mrem/hr. Remote-handled packages are those with surface dose rates that exceed 200 mrem/hr.

LLW is classified further according to radionuclide concentration into Category 1, Category 3, and Greater Than Category 3 (GTC 3). The higher the category number, the greater the activity and long-lived radionuclide concentration.

Radioactive waste can exist as material generated, stored, treated, or disposed. The distinctions among these various waste conditions or states are as follows:

- Generated waste – A material recently discharged from a facility production process or operation that is regarded as a waste because it has no economic value.

- Stored waste – A waste that, following generation (and usually some treatment/processing), is being (temporarily) retained and monitored in a retrievable manner pending disposal.

- Treated waste – A waste that, following generation, has been altered chemically or physically to reduce its toxicity or prepare the waste for storage or disposal.

- Disposed waste – A waste that has been put in final emplacement to ensure its isolation from the biosphere and for which there is no intention of retrieval. Deliberate action is required to regain access to the waste.

Other acronyms and definitions include:

CDI – Canyon Disposition Initiative

CSB – Canister Storage Building

CERCLA – Comprehensive Environmental Response, Compensation and Liability Act

CWC – Central Waste Complex

DOE – U. S. Department of Energy

DOE-RL – U. S. Department of Energy Richland Operations Office

DOE-HQ – U. S. Department of Energy Headquarters

Ecology – Washington State Department of Ecology

EIS – Environmental Impact Statement

EM – Environmental Management, DOE

ER – Environmental Restoration

ERC – Environmental Restoration Contractor

ERDF – Environmental Restoration Disposal Facility

ETF – 200 Area Effluent Treatment Facility

FH – Fluor Hanford, Incorporated

FY – Fiscal Year

HSSWAC – Hanford Site Solid Waste Acceptance Criteria

ISMS – Integrated Environmental, Safety, and Health Management System

LDR – Land Disposal Restriction

LLBG – Low-Level Burial Grounds

LERF – Liquid Effluent Retention Facility

LLE – Long length equipment

NTS – Nevada Test Site

ORP – Department of Energy Office of River Protection

PCB – Polychlorinated Biphenyl

PMP – Project Management Plan

PNNL – Pacific Northwest National Laboratory

Pu – Plutonium

PFP – Plutonium Finishing Plant

RCRA – Resource Conservation and Recovery Act of 1976

ROD – Record of Decision

RTG – Radioisotopic Thermal Generators

TEDF – Treated Effluent Disposal Facility

TSD – Treatment, storage, and/or disposal

SRS – Savannah River Site

SW EIS ROD – Solid Waste Environmental Impact Statement Record of Decision

SWIFT – Solid Waste Information Forecasting Tool

TSCA – Toxic Substance Control Act

WESF – Waste Encapsulation and Storage Facility

WIPP – Waste Isolation Pilot Plant

WM PEIS ROD – Waste Management Programmatic Environmental Impact Statement Record of Decision

WRAP – Waste Receiving and Processing Facility

WTP – ORP Waste Treatment Plant

APPENDIX B

FACILITIES AND CAPABILITIES

The major Waste Management Program capabilities and services include solid waste treatment/processing, storage, and disposal; liquid waste management; and support services.

Solid Waste Treatment/Processing

The Waste Management Program provides solid waste processing services at the WRAP facility and the T Plant Complex. A local contractor is currently used for specialized treatment services.

Figure B-1. Waste Receiving and Processing Facility.

The WRAP mission is to process drums of TRU waste for permanent disposal at WIPP. WRAP (Fig. B-1) inspects, processes, and repackages the waste to ensure that it meets the acceptance criteria of the appropriate disposal facility. Most of the waste handling operations are performed remotely to minimize exposure of personnel to radioactive materials. The facility has automated processes to examine and characterize waste using x-ray, gamma, and neutron assay equipment (Fig. B-2). Remote packaging is performed as required and the waste is readied for further processing or transport for final disposal. WRAP also performs nondestructive examination and nondestructive assay of boxed TRU waste.

Figure B-2. WRAP Linear Diode Array Image of Waste Drum and Contents.

WRAP processing capabilities include amalgamation of mercury, neutralization for pH adjustment, solidification of free liquids, and macroencapsulation.

The T Plant Complex, part of the M-91 capability (Fig. B-3), provides processing, verification and repackaging of waste in drums and other containers. Additional services include sampling of TRU waste containers, headspace gas, storage of irradiated fuel assemblies from the Shippingport reactor, and decontamination services for the Site. The T Plant Canyon is being prepared for receipt and storage of radioactive sludge from the K-Basin.

Figure B-3. T Plant Complex.

Commercial contracts are in place with ATG Inc. for nonthermal stabilization of inorganic solids; macroencapsulation of debris; and thermal treatment of organic solids.

Solid Waste Storage

The CWC (Fig. B-4) provides safe and environmentally compliant storage for containerized LLW, MLLW, and TRU waste from both onsite and off-site. Total design storage capacity is 17,000 m^3, or 80,000 drum equivalents (Fig. B-5); the operational capacity is about 64,000 drum equivalents.

Figure B-4. Central Waste Complex.

The CWC includes a waste receiving and staging area for 520 m^3 of waste (2,500 drum equivalents); a mixed waste interim storage pad; 120 m^3 (600 drum equivalents) of low flash-point and alkali-mixed waste storage; radioactive and/or mixed waste storage facilities (the 2402-W and 2403-W building series) with 14,000 m^3 (65,000 drum equivalents) storage capacity; the 2404-W series storage buildings with 2,900 m^3 (14,000 drum equivalents) storage capacity; German log storage; and sodium storage modules with 35 m^3 (168 drum equivalents) storage capacity. 2401-W, 2402-W series, and 2404-W series buildings can store *Toxic Substances Control Act* - regulated polychlorinated biphenyls.

Figure B-5. Container Storage in the Central Waste Complex.

Solid Waste Disposal

The LLBG are used for disposal of Category 1 and Category 3 LLW from the Hanford Site and off-site generators. Six LLBG are located in the 200 West Area, and two in the 200 East Area.

Figure B-6. Defueled Reactor Compartment Disposal in the Low-Level Burial Grounds.

The capacity of the LLBG for solid waste disposal is approximately 930,000 m^3 and could be significantly increased using a deep trench configuration. The LLBG Trench 94 is permitted for the disposal of 220 defueled reactor compartments (Fig. B-6).

Two *RCRA* Subtitle-C, Mixed Waste Disposal Units (each 24,000 m^3) have capability for disposal of LDR-compliant MLLW (Fig. B-7). Trench 34 began operation in 1999.

Figure B-7. Mixed Waste Disposal Unit.

Nonradioactive hazardous waste is sent to off-site commercial facilities for treatment and disposal.

Liquid Waste

The Waste Management Program provides integrated liquid waste management to support Hanford Site cleanup. The Waste Management Program receives, treats, and disposes of liquid waste from other onsite programs and projects, using the following treatment facilities; LERF, the 200 Area ETF, the 200 Area TEDF, and the 242-A Evaporator.

LERF consists of three basins with a usable capacity of about 53 million L (14 million gal); an additional reserve capacity of one basin (about 26.5 million L [seven million gal]) is also maintained. The LERF receives and temporarily stores effluents from the 242-A Evaporator, the groundwater transfer system, and the truck-unloading facility (Fig. B-8). From LERF, the water is routed to the 200 Area ETF (Fig. B-9).

Figure B-8. 200 Area ETF Truck-Unloading Facility.

The 200 Area ETF treatment process removes toxic metals, radionuclides, and ammonia and destroys organics. The 200 Area ETF processing capacity varies with feed impurity, with a design capacity of 216 million L (57 million gal) per year. The ETF treatment process constitutes best available treatment technology and includes pH adjustment, filtration, ultraviolet light/peroxide destruction of organics, reverse osmosis, and ion exchange. Storage tanks hold the treated effluent for verification of acceptable discharge levels, before the effluent is transferred to a state-approved land disposal site north of the 200 West Area.

Figure B-9. 200 Area Effluent Treatment Facility.

The 200 Area TEDF is a collection and disposal system for non-regulated waste streams. The 200 Area TEDF includes more than 19 kilometers (12 miles) of polyvinyl chloride pipe up to 36 centimeters (14 inches) in diameter connecting facilities to a second state-approved land disposal site located east of the 200 East Area. The 200 Area TEDF has a capacity of 13,000 L (3,400 gal) per minute, equivalent to 6.8 billion L (1.8 billion) gal per year.

Figure B-10. 242-A Evaporator.

The 242-A Evaporator (Fig. B-10) concentrates ORP tank waste to reduce the overall storage requirements. The Evaporator will also support ORP WTP operations. The facility has a volume reduction capacity of 270,000 L (70,000 gal) per day. The concentrated waste is returned to the waste tanks and the process condensate is transferred to the LERF.

Cesium and Strontium Capsules

The WESF (Fig. B-11) provides safe storage and monitoring of radioactive cesium and strontium capsules. WESF contains 7 hot cells and 12 storage/transfer pools. The current inventory consists of 1312 cesium capsules, 23 overpacked cesium capsules, and 601 strontium capsules. The stored capsules contain about 37 percent of the total radioactivity of Hanford Site wastes.

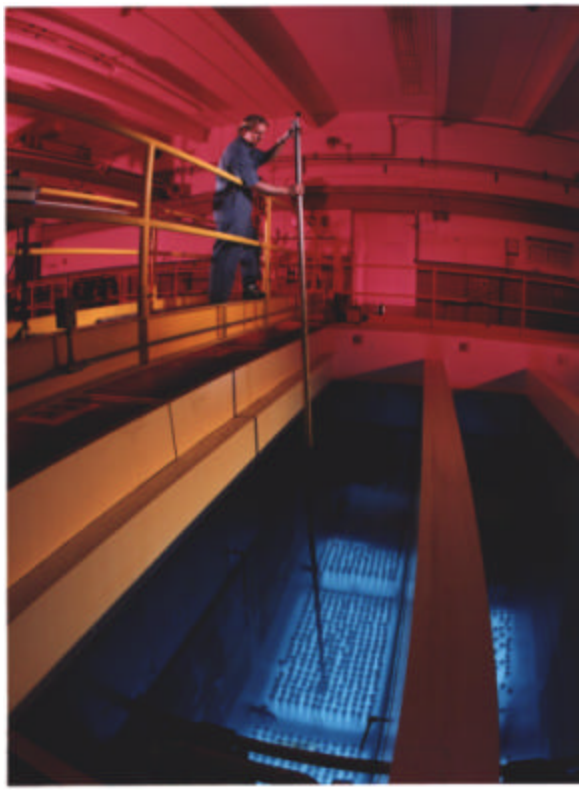


Figure B-11. Waste Encapsulation and Storage Facility.

Appendix C: SWIFT – Solid Waste Forecast 2001.0 (cubic meters)

Waste Type	Category	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
LLW	Storage/Inventory	299	299	299	299	299	299	299	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	New Waste	5,857	4,131	3,898	4,277	4,121	4,045	3,361	3,441	3,624	3,158	3,125	3,130	3,135	3,272	3,293	3,387	3,047	2,574	2,487	2,405	2,280	2,100	2,026
	Treated	0	0	0	0	0	0	0	299	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Disposed-Onsite	6734	5133	5241	5352	5121	4796	4161	4392	4169	3690	3639	3818	3822	4348	3693	3729	3343	2822	2744	2659	2534	2338	2253
	Disposed-Offsite																							
MLLW	Storage/Inventory	7895	8212	7079	5551	3800	2324	2271	2181	2188	2231	2293	2216	2339	2473	2598	2001	1939	1824	1709	1594	1479	1361	1243
	New Waste	628	799	1,212	1,384	1,190	905	1,789	1,537	1,746	2,021	1,760	1,746	1,918	1,911	1,959	1,921	4,281	3,186	3,025	2,880	2,864	2,796	2,686
	Treated	568	265	1917	2467	2517	2086	1170	1192	1370	1371	1318	1356	1348	1428	1453	2164	1978	1125	1056	971	925	877	830
	Disposed-Onsite	478	480	2472	3537	3566	3187	1785	1522	1573	1805	1539	1467	1623	1608	1655	2538	4282	3438	3280	3127	3112	3050	2941
	Disposed-Offsite																							
TRU(M)	Storage/Inventory	16768	17735	17750	17719	17829	17937	17860	17612	16989	15706	13836	11930	10467	8815	7908	7323	6433	5903	5445	5117	4764	4347	3933
	New Waste	312	545	486	440	257	288	348	357	248	125	93	62	96	112	79	319	168	145	198	326	188	116	116
	Treated																							
	Disposed-Onsite																							
	Total Disposed-Offsite	42	0	82	117	144	204	275	350	462	674	899	899	899	800	836	939	863	684	637	614	520	544	498
	Contact Handled	42	0	82	117	144	204	275	350	462	674	899	899	889	788	816	899	803	624	577	544	450	473	428
	Remote Handled	0	0	0	0	0	0	0	0	0	0	0	0	10	12	20	40	60	60	60	70	70	70	70

Waste Type	Category	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
LLW	Storage/Inventory	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	New Waste	1,939	1,844	1,754	1,655	1,473	1,324	1,111	839	800	746	749	756	606	608	616	578	591	568	581	568	581	568	581
	Treated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Disposed-Onsite	2198	2061	1982	1875	1715	1579	1360	1082	951	818	819	834	617	627	626	590	601	586	592	578	590	580	600
	Disposed-Offsite																							
MLLW	Storage/Inventory	1125	1007	889	771	652	478	304	130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	New Waste	2,713	2,575	2,595	2,571	2,527	375	251	215	157	94	94	94	25	25	25	25	25	24	24	24	24	24	24
	Treated	794	750	707	651	609	461	415	371	270	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Disposed-Onsite	2969	2828	2854	2828	2789	720	596	563	421	93	93	93	25	25	25	25	25	24	24	24	24	24	24
	Disposed-Offsite																							
TRU(M)	Storage/Inventory	3515	3163	2839	2486	2071	1545	1017	491	259	265	272	279	301	1164	3341	5680	8203	10629	10651	10651	10651	10651	10651
	New Waste	201	265	217	180	116	7	7	7	7	7	7	7	22	863	2,178	2,339	2,523	2,426	22				
	Treated																							
	Disposed-Onsite																							
	Total Disposed-Offsite	580	574	524	541	482	574	492	497	210														
	Contact Handled	510	504	454	471	412	505	462	497	210														
	Remote Handled	70	70	70	70	70	70	30	0	0														

Appendix D: Liquid Waste Forecast – 200 Area TEDF (gallons)

WasteType	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Trtd Effluent
	PFP	222-S	Package	T Plant	283-W	283-E	WESF	WESF	241-A	242-A-81	242-A	244-AR	284-E	Ph 1 LAW/HLW	Ph 2 LAW	Ph 2 HLW	Ph 2 Deact	Trtd Effluent
Fiscal	Wastewater	Laboratory	Boilers	Wastewater	Water Treat'mt	Water Treat'mt	Liq Effluent	Cooling Water	Tank Farm	Water Svcs	Cooling Water	Cooling Water	Power Plant	WW Transf	WW Transf	WW Transf	Trtd Liq Eff	to 200E
Year		Wastewater			Plant Wstwtr.	Plant Wstwtr.			Cooling Water	Bldg	& Steam Cond		Wastewater	Trtd Liq Eff	Trtd Liq Eff	Trtd Liq Eff		SALDS
2001	32,587,200	2,417,760	0	1,839,600	14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	51,800,000	0	0					148,457,840
2002	32,587,200	2,417,760	0	1,839,600	14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	51,800,000	0	0					148,457,840
2003	32,587,200	2,417,760	0	1,839,600	14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	103,600,000	0	0					200,257,840
2004	32,587,200	2,417,760	0	1,839,600	14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	0	0	0					96,657,840
2005	32,587,200	2,417,760	0	1,839,600	14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	103,600,000	0	0					200,257,840
2006	32,587,200	2,417,760	0	1,839,600	14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	51,800,000	0	0					148,457,840
2007	32,587,200	2,417,760	0	1,839,600	14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	51,800,000	0	0	79,260,000				227,717,840
2008	32,587,200	2,417,760	0	1,839,600	14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	51,800,000	0	0	79,260,000				227,717,840
2009	32,587,200	2,417,760	0	1,839,600	14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	51,800,000	0	0	79,260,000				227,717,840
2010	32,587,200	2,417,760	0	1,839,600	14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	51,800,000	0	0	79,260,000				227,717,840
2011	32,587,200	2,417,760	0		14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	51,800,000	0	0	79,260,000				225,878,240
2012	32,587,200	2,417,760	0		14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	51,800,000	0	0	79,260,000	52,840,000	52,840,000		331,558,240
2013	32,587,200	2,417,760	0		14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	51,800,000	0	0	79,260,000	52,840,000	52,840,000		331,558,240
2014	32,587,200	2,417,760	0		14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	51,800,000	0	0	79,260,000	52,840,000	52,840,000		331,558,240
2015		2,417,760	0		14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	51,800,000	0	0	79,260,000	52,840,000	52,840,000		298,971,040
2016		2,417,760	0		14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	51,800,000	0	0	79,260,000	52,840,000	52,840,000		298,971,040
2017		2,417,760	0		14,191,200	15,294,960	7,884,000	8,935,200	12,088,800	1,419,120	51,800,000	0	0	79,260,000	52,840,000	52,840,000		298,971,040
2018		2,417,760	0		14,191,200	15,294,960	7,884,000		12,088,800	1,419,120	51,800,000	0	0	79,260,000	52,840,000	52,840,000		290,035,840
2019		2,417,760	0		14,191,200	15,294,960	7,884,000			1,419,120		0	0		52,840,000	52,840,000		146,887,040
2020		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0		52,840,000	52,840,000		139,003,040
2021		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0		52,840,000	52,840,000		139,003,040
2022		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0		52,840,000	52,840,000		139,003,040
2023		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0		52,840,000	52,840,000		139,003,040
2024		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0		52,840,000	52,840,000		139,003,040
2025		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0		52,840,000	52,840,000		139,003,040
2026		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0		52,840,000	52,840,000		139,003,040
2027		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0		52,840,000	52,840,000		139,003,040
2028		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0		52,840,000	52,840,000		139,003,040
2029		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0				24,702,700	58,025,740
2030		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0					33,323,040
2031		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0					33,323,040
2032		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0					33,323,040
2033		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0					33,323,040
2034		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0					33,323,040
2035		2,417,760	0		14,191,200	15,294,960				1,419,120		0	0					33,323,040
TOTAL	456,220,800	84,621,600	0	18,396,000	496,692,000	535,323,600	149,796,000	151,898,400	217,598,400	49,669,200	984,200,000	0	0	951,120,000	898,280,000	898,280,000	24,702,700	5,916,798,700

Appendix D (Cont.): Liquid Waste Forecast – 200 Area TEDF (gallons)

Project	WM	Fac Stab	ER	ER	ER	WM	RPP	RPP	RPP	RPP	WM	Project	WM	RPP	SNF	SNF	ER		WM
WasteType	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater	Waste Type	Wastewater	Wastewater	Wastewater	Wastewater	Wastewater		Trtd Effluent
Transfer	Pipeline	Pipeline	Pipeline	Pipeline	Tanker Truck	Tanker Truck	Pipeline	Pipeline	Pipeline	Pipeline		Tfransfer	Tanker Truck	Tanker Truck	Tanker Truck	Tanker Truck	Tanker Truck		Trtd Effluent
	242-A Evap	242-A Evap	200-UP-1	ERDF	GW Monitoring	Mixed Waste	Phase 1	Phase 2	Phase 2	Phase 2	200 East Lined		WESF	T Plant	K Basins	KE/KW Basin	F&H Basin	Unplanned	Trtd Effluent
Fiscal	Process	Deact Waste	Groundwater	Leachate	Purge Water	Trench	Rad/Dang	LAW	HLW	Deact Waste	MW Trench	Fiscal	Pool Cell	PWR Pool	Level Control	Water	Water	Liquid	to 200W
Year	Condensate					Leachate	Liq Eff	Wastewater	Wastewater		Leachate	Year	Water	Water	Water			Effluents	SALDS
2001	810,000		25,000,000	300,000	250,000	396,301						2001			55,000		40,000	100,000	26,951,301
2002	890,000		25,000,000	300,000	250,000	396,301						2002		43,000	120,000			100,000	27,099,301
2003	1,830,000		25,000,000	300,000	250,000	396,301						2003			145,000			100,000	28,021,301
2004	0			300,000	200,000	396,301						2004			105,000		200,000	100,000	1,301,301
2005	1,510,000			300,000	200,000	396,301						2005			20,000	1,200,000		100,000	3,726,301
2006	410,000			300,000	200,000	396,301						2006				1,200,000		100,000	2,606,301
2007	680,000			300,000	200,000	396,301	15,852,000				700,000	2007						100,000	18,228,301
2008	450,000			300,000	200,000	396,301	15,852,000				1,200,000	2008						100,000	18,498,301
2009	210,000			300,000	200,000	396,301	15,852,000				1,200,000	2009						100,000	18,258,301
2010	600,000			300,000	200,000	396,301	15,852,000				1,200,000	2010						100,000	18,648,301
2011	740,000			300,000	200,000	396,301	15,852,000				1,200,000	2011						100,000	18,788,301
2012	370,000			300,000	200,000	396,301	15,852,000	8,560,000	8,560,000		1,200,000	2012						100,000	35,538,301
2013	420,000			300,000	200,000	396,301	15,852,000	8,560,000	8,560,000		1,200,000	2013						100,000	35,588,301
2014	420,000			300,000	200,000	396,301	15,852,000	8,560,000	8,560,000		1,200,000	2014						100,000	35,588,301
2015	530,000			300,000	200,000	396,301	15,852,000	8,560,000	8,560,000		1,200,000	2015						100,000	35,698,301
2016	340,000			300,000	200,000	396,301	15,852,000	8,560,000	8,560,000		1,200,000	2016						100,000	35,508,301
2017	500,000			300,000	200,000	396,301	15,852,000	8,560,000	8,560,000		1,200,000	2017						100,000	35,668,301
2018	340,000			300,000	200,000	396,301	15,852,000	8,560,000	8,560,000		1,200,000	2018	84,150					100,000	35,592,451
2019		100,000			200,000	396,301		8,560,000	8,560,000		1,200,000	2019						100,000	19,116,301
2020					200,000	396,301		8,560,000	8,560,000		1,200,000	2020						100,000	19,016,301
2021					200,000	396,301		8,560,000	8,560,000		1,200,000	2021						100,000	19,016,301
2022					200,000	396,301		8,560,000	8,560,000		1,200,000	2022						100,000	19,016,301
2023					200,000	396,301		8,560,000	8,560,000		1,200,000	2023						100,000	19,016,301
2024					200,000	396,301		8,560,000	8,560,000		1,200,000	2024						100,000	19,016,301
2025					200,000	396,301		8,560,000	8,560,000		1,200,000	2025						100,000	19,016,301
2026					200,000	396,301		8,560,000	8,560,000		1,200,000	2026						100,000	19,016,301
2027					200,000	396,301		8,560,000	8,560,000		1,200,000	2027						100,000	19,016,301
2028					200,000	396,301		8,560,000	8,560,000		1,200,000	2028						100,000	19,016,301
2029					200,000	396,301				15,430,000	1,200,000	2029						100,000	17,326,301
2030					200,000	396,301					1,200,000	2030						100,000	1,896,301
2031												2031							0
2032												2032							0
2033												2033							0
2034												2034							0
2035												2035							0
TOTAL	11,050,000	100,000	75,000,000	5,400,000	6,150,000	11,889,036	190,224,000	145,520,000	145,520,000	15,430,000	28,300,000	TOTAL	84,150	43,000	445,000	2,400,000	240,000	3,000,000	640,795,186

Appendix E: TPA Milestones

M-19-00	***09/30/02***	***Treatment or Direct Disposal of 1644 m^3 of MLLW. (Cumulative treatment and/or direct disposal rates will be at least 246 m^3 by the end of FY 2000, 822 m^3 by FY 2001, and 1644 m^3 by FY 2002).***
M-19-01	***09/30/99***	***Initiate treatment of CH MLLW.***
M-26-01	***07/31/00***	***Annual Hanford LDR report (ongoing).***
M-26-05F	***08/31/99***	***Tritium Treatment Technology Evaluation (ongoing – biannual).***
M-32-03	***09/30/99***	***Complete W-259 Construction.***
M-32-03-T06	***09/30/99***	***Complete Upgrades to T Plant Tank System.***

Note: *Completed milestones italicized.*

Appendix E: TPA Milestones

M-91-00	**TBD**	**Complete the acquisition of new facilities, modification of existing facilities, and/or modification of planned facilities necessary for storage, treatment/processing and disposal of all Hanford Site TRU/TRUM, LLW and GTC3.**
M-91-01	**TBD**	**Complete the acquisition of new facilities, modification of existing facilities, and/or modification of planned facilities necessary for storage, treatment/processing prior to disposal of all Hanford Site post-1970 TRU/TRUM.**
M-91-02	***12/31/98***	***Initiate processing of contact handled TRU/TRUM waste at Waste Receiving and Processing Facility WRAP I contact handled, small container).***
M-91-03	***06/30/00***	***Submit TRU/TRUM PMP.***
M-91-04	***09/30/00***	***Complete construction of small container, CH, TRU/TRUM retrieval and initiate operations.***

Appendix E: TPA Milestones

M-91-05-T01	**12/31/02**	**Complete and submit TRU/TRUM retrieval and processing facility engineering study and functional design criteria.**
M-91-06-T01	**09/30/03**	**Award necessary privatized contracts for RH and oversized TRU/TRUM.**
M-91-07	**09/30/04**	**Complete project for small container, CH, TRU/TRUM retrieval.**
M-91-08-T01	**06/30/05**	**Complete construction and start operation of RH and oversized TRU/TRUM processing facility.**
M-91-09	***06/30/97***	***Initiate operations at new CWC facilities.***
M-91-10	***06/30/99***	***Submit LLMW and GTC3 PMP.***
M-91-11-T01	**12/31/00**	**Complete and submit LLMW/GTC3 engineering study and FDC.**
M-91-12	12/31/00	Initiate thermal treatment. At least 600 m^3 provided for treatment by December 2005.
M-91-13	***06/30/01***	***Initiate disposal of CH LLMW.***

Appendix E: TPA Milestones

M-91-14-T01	**10/31/03**	**Award commercialization contract(s) for RH and oversized LLMW/GTC3 waste per PMP.**
M-91-15	**06/30/08**	**Complete acquisition of facilities and initiate treatment of RH and oversized CH LLMW.**
M-91-18	**06/29/01**	**Transmit the T Plant Sludge Conceptual Design Document (CDD) to the Washington State Department of Ecology.**
M-91-19-T01	**09/30/02**	**Complete physical activities at T Plant necessary to store floor and pit sludge.**
M-91-20	**12/31/02**	**T Plant is ready to receive the first canister of K Basins floor and pit sludge.**
M-91-21-T01	**11/29/03**	**Complete physical activities at T Plant necessary to store canister and fuel wash sludge.**
M-91-22	**02/29/04**	**T Plant is ready to receive canister and fuel wash sludge from K Basins.**
M-92-01	12/31/09	Complete WESF Upgrades.

Attachment

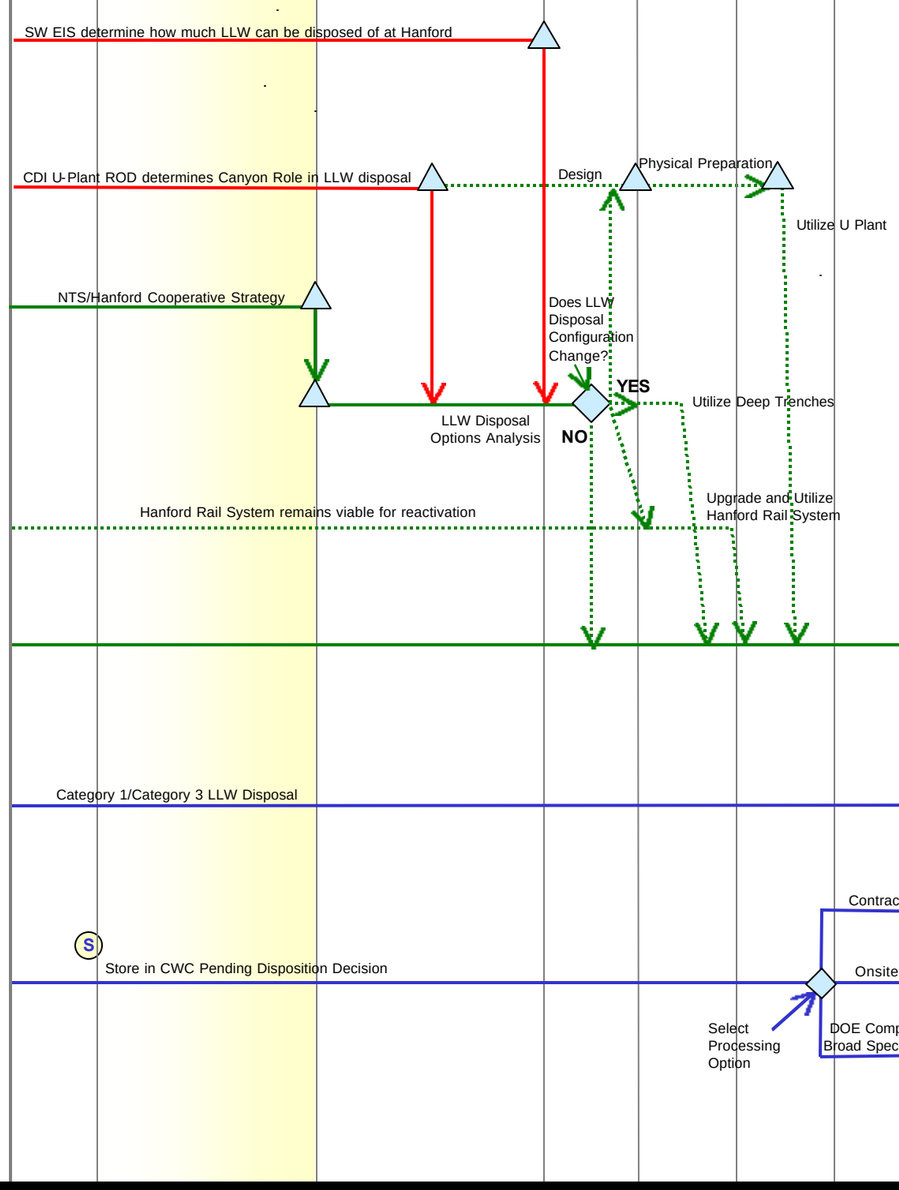
- Draft Strategic Plan Master Logic - Low Level Waste
- Draft Strategic Plan Master Logic - Mixed Low Level Waste
- Draft Strategic Plan Master Logic - Contact Handled TRU(M) Waste
- Draft Strategic Plan Master Logic - Remote Handled TRU(M) Waste
- Draft Strategic Plan Master Logic - Liquid Effluents and the 242-A Evaporator

FY2001

Strategic Plan Master Logic - Low Level Waste

Fluor Hanford

Streams	FY00	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022 & Beyond



Acronyms
CDI – Canyon Disposition Initiative
CWC- Central Waste Complex
EIS - Environmental Impact Statement
GTC III – Greater than Category III
HSSWAC – Hanford Site Solid Waste Acceptance Criteria
LLW - Low Level Waste
NTS - Nevada Test Site
PEIS - Programmatic Environmental Impact Statement
ROD - Record of Decision
SW - Solid Waste

Key Interface Documents

1. LAW/HLW Plant Phase I, Sample Residues - ICD-23
2. LAW/HLW Plant Phase I,Radioactive Solid Waste - ICD-3
3. Tank Farm System, Solid Waste - HNF-4482

Key Assumptions

1. Hanford railroad remains viable through 2002 for "reactivation" with "minor" upgrades/repairs required.
2. RL/NTS DOE develop a cooperative strategy to dispose of complex LLW in FY01, strategy maintains operation and viability of both sites.
3. A LLW Disposal Analysis will be performed to evaluate the best LLW configuration to support the SW EIS ROD, CDI and cooperative strategy.
4. CDI – Start physical modifications within 18 months of the issuance of the ROD.
5. Transition LLBGs to long term Site Stewardship in FY 2046

Note: Metrics are included in the Strategic Plan.

Legend

- D Disposal
- P Process
- S Storage
- Start / Completion
- Decision
- External Drivers
- Technology Inputs
- Treatment, Storage & Disposal Strategies
- Stream Specific Strategies
- Potential Alternative/Activity

2/01/01

FY2001

Strategic Plan Master Logic – Mixed Low Level Waste

Fluor Hanford

Stream	FY00	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022 & Beyond

Direct Disposal

183-H and other LDR Compliant Waste

- LDR Report
- Resolution of the Dispute Could Impact Quality, Cost, and Schedule of MLLW to be Treated and Disposed
- SW EIS ROD
- How Much MLLW Can be Disposed at Hanford
- Submitted 5/98
- ETF Delisting Petition
- Store LDR Compliant Wastes Pending Disposal Authorization (D)

LLE

- Receive Treated LLE From ORP for Disposal in the Mixed Waste Disposal Units (D)

Spent Melters

- Dispose of ORP Spent Melters (2028) (D)

Newly generated

- (2028) (D)

Non-Thermal Treatment

Inorganics, Debris

- (S) (T) (D)

183-H Inorganic Salts, Sludge and Debris

- (S) (T)
- Treatment Starts Completion TBD

Thermal Treatment

- Develop Transport for Type A Liquid Waste

Organics and Lab Packs

- M-91-12 (T) Thermal Treatment (D)
- M-91-12

Unique Wastes

Lead

- (S) CWC Storage
- Treat Newly Generated Waste (D)

Mercury

- (S) Stored Mercury in CWC
- (T) Treat existing inventory as Determined by EM Integration effort
- (T) Treatment as determined by EM Integration Effort

GTC III (RTG's)

- (S) Review on a Case by Case Basis to Determine Acceptance and Disposition (LLBG, Canyon, Offsite) (D)

Navy Waste

- Trench 94 – Dispose of Defueled Reactor Compartments
- Complete Trench Expansion Study

Oversized Contact-Handled MLLW And Remote-Handled MLLW

- (S) Store Oversized/Remote Handled MLLW in CWC & Burial Grounds Until M-91 Treatment is Available
- (T) Treat & Dispose in Mixed Waste Disposal Units (D)

Disposal

- NTS/Hanford Cooperative Strategy
- Interim Cap
- Interim Cap
- Mixed Waste Disposal Unit Trench 34 Operational
- Trench 31 Operational
- Determine Disposal Plan
- Site-wide MLLW Disposal Options Study •MLLW •ILAW •Spent Melters
- Design and Construct New Disposal Units
- Disposal Units (D) Final Cap

M-91

- M-91-00 TBD
- M-91-14-T01
- M-91-15
- Engineer Studies
- FDC
- CDD
- Complete Construction
- Begin Definitive Design
- Begin Construction
- M-91 Startup of Added Capacity
- M-91 PMP
- Additional Capabilities Required Beyond Existing T Plant
- Develop/award Commercial Contract(s)
- RH TRU/RH MLLW/Oversize Treatment and Packaging at T Plant (2032) (D)

Commercial

- (T)
- All Waste Must be Treated to LDR Requirements Before Receipt at CWC

CWC

- (S)
- (T)

Acronyms

CWC - Central Waste Complex
EIS -Environmental Impact Statement
GTC III - Greater than Category III
HSSWAC - Hanford Site Solid Waste Acceptance Criteria
MLLW - Low Level Waste
PEIS - Programmatic Environmental Impact Statement
ROD - Record of Decision
SW - Solid Waste
LLE - Long Length Equipment

Key Assumptions

1.Receipt of off-site MLLW for disposal at Hanford waiting on equity discussions with the State of Washington (expected March 2001)
2. All off-site MLLW Received will be ready for Disposal.

Note: Metrics are included in the Strategic Plan

TPA Milestones

M-91-00 (TBD) Complete the acquisition of new facilities, modifications of existing facilities, and/or modification of planned facilities necessary for storage, treatment/processing and disposal of all Hanford Site TRU/TRUM, LLMW and GTC3.
M-91-12 Initiate thermal treatment. At least 600 m3 provided for treatment by December 2005. (12/31/00, 12/31/05)
M-91-14-T01 Award commercialization contract(s) for RH and oversized LLMW/GTC3 waste per PMP. (10/31/03)
M-91-15 Complete acquisition of facilities and initiate treatment of RH and oversized CH LLMW. (6/30/08)

Legend

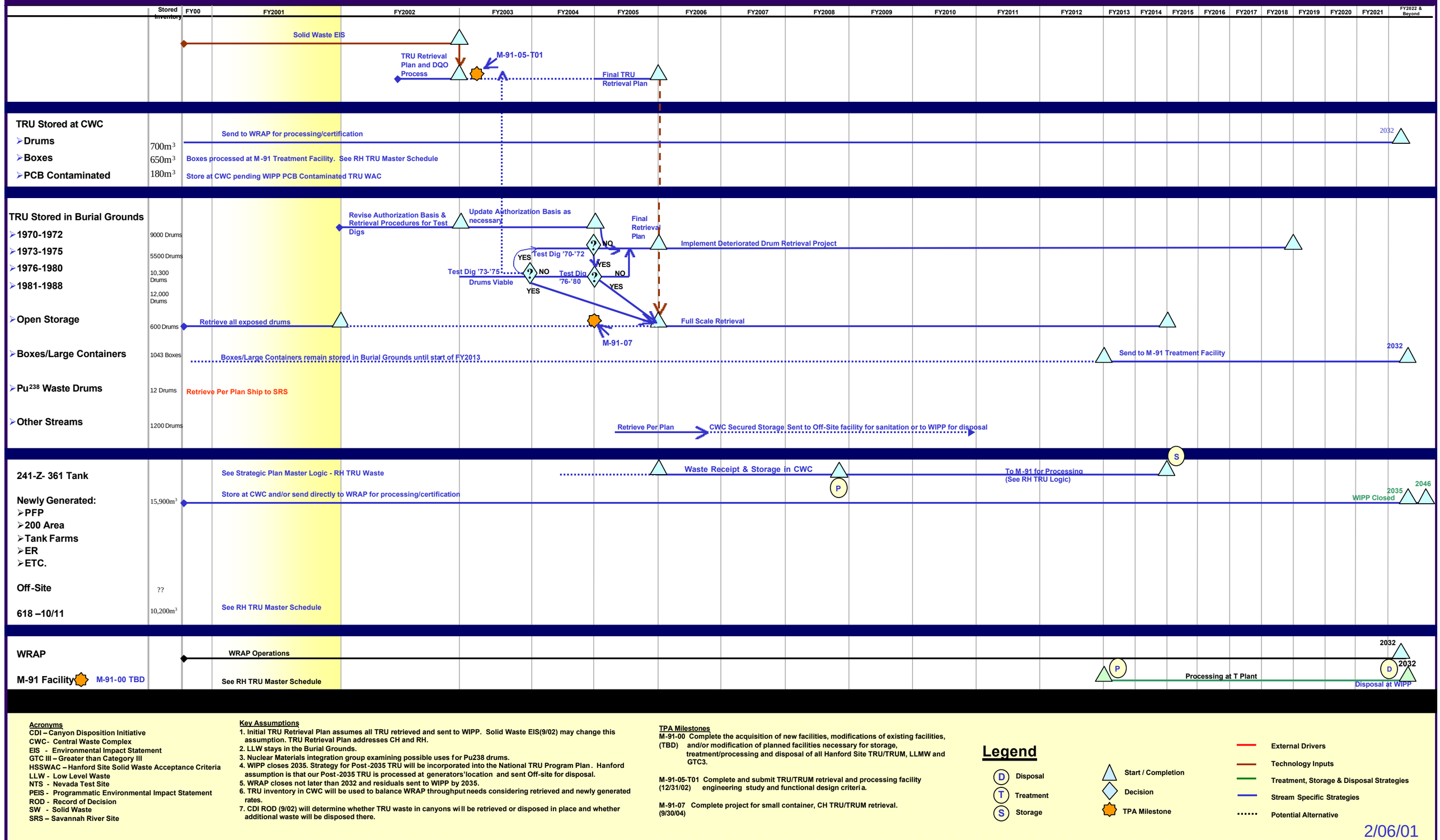
- (D) Disposal
- (T) Treatment
- (S) Storage
- Start / Completion
- Decision
- TPA Milestone
- External Drivers
- Technology Inputs
- Treatment, Storage & Disposal Strategies
- Stream Specific Strategies
- Potential Alternative

2/01/01

FY2001

Strategic Plan Master Logic - Contact Handled TRU(M) Waste

Fluor Hanford



Acronyms
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EIS - Environmental Impact Statement
GTC III – Greater than Category III
HSSWAC – Hanford Site Solid Waste Acceptance Criteria
LLW - Low Level Waste
NTS - Nevada Test Site
PEIS - Programmatic Environmental Impact Statement
ROD - Record of Decision
SW - Solid Waste
SRS – Savannah River Site

Key Assumptions
1. Initial TRU Retrieval Plan assumes all TRU retrieved and sent to WIPP. Solid Waste EIS(9/02) may change this assumption. TRU Retrieval Plan addresses CH and RH.
2. LLW stays in the Burial Grounds.
3. Nuclear Materials integration group examining possible uses for Pu238 drums.
4. WIPP closes 2035. Strategy for Post-2035 TRU will be incorporated into the National TRU Program Plan. Hanford assumption is that our Post-2035 TRU is processed at generators' location and sent Off-site for disposal.
5. WRAP closes not later than 2032 and residuals sent to WIPP by 2035.
6. TRU inventory in CWC will be used to balance WRAP throughput needs considering retrieved and newly generated rates.
7. CDI ROD (9/02) will determine whether TRU waste in canyons will be retrieved or disposed in place and whether additional waste will be disposed there.

TPA Milestones
M-91-00 (TBD) Complete the acquisition of new facilities, modifications of existing facilities, and/or modification of planned facilities necessary for storage, treatment/processing and disposal of all Hanford Site TRU/TRUM, LLMW and GTC3.

M-91-05-T01 (12/31/02) Complete and submit TRU/TRUM retrieval and processing facility engineering study and functional design criteria.

M-91-07 (9/30/04) Complete project for small container, CH TRU/TRUM retrieval.

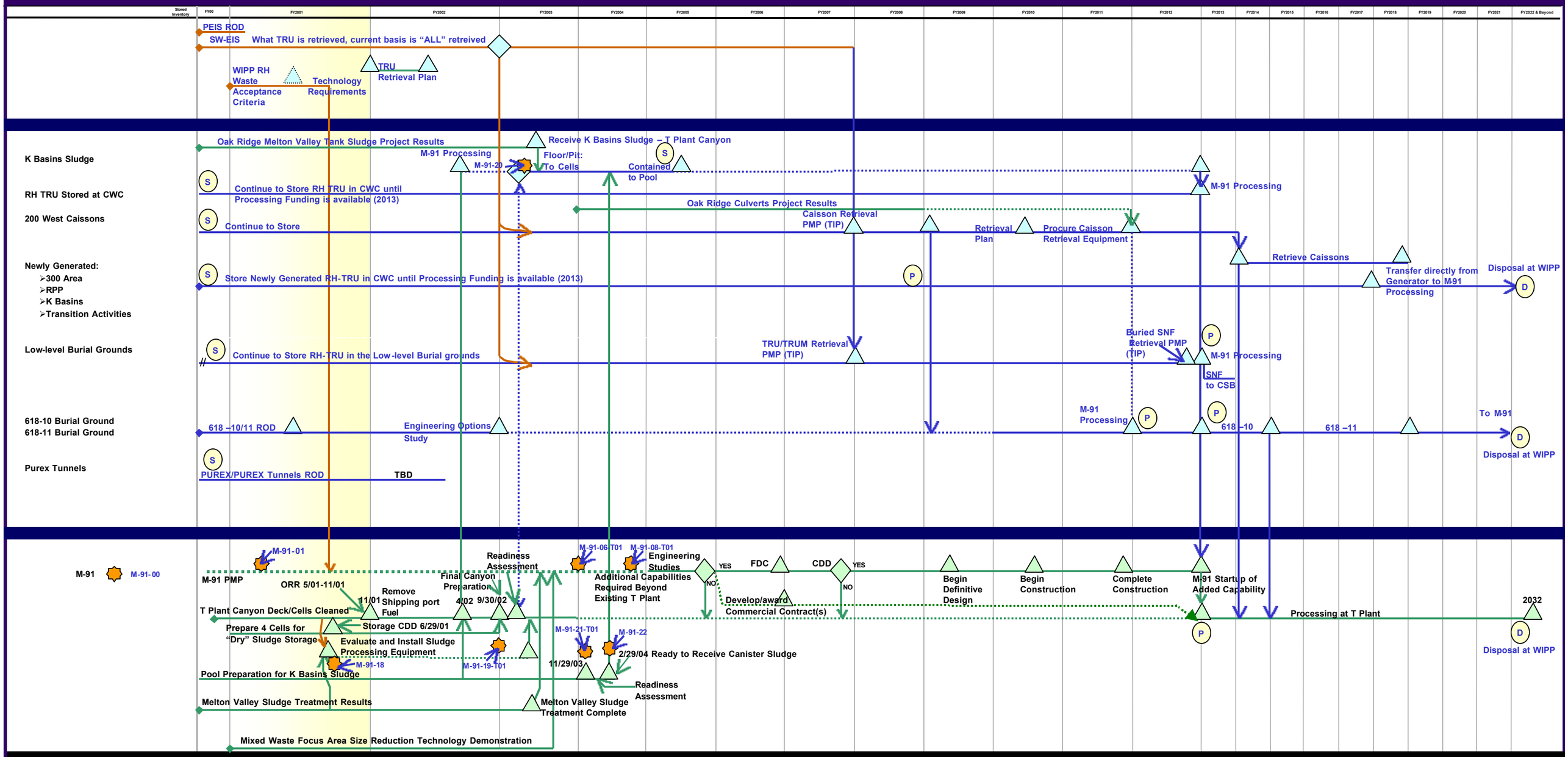
Legend
- D Disposal
- T Treatment
- S Storage
- Start / Completion
- Decision
- TPA Milestone
- External Drivers
- Technology Inputs
- Treatment, Storage & Disposal Strategies
- Stream Specific Strategies
- Potential Alternative

2/06/01

FY2001

Strategic Plan Master Logic - Remote Handled TRU(M) Waste

Fluor Hanford



Acronyms

CWC - Central Waste Complex
EIS - Environmental Impact Statement
PEIS - Programmatic Environmental Impact Statement
ROD - Record of Decision
SW - Solid Waste
RH - Remote Handled
WIPP - Waste Isolation Pilot Plant
M-91 – RH TRU Waste Processing Capability
CDI – Canyon Disposition Initiative

Key Assumptions

1. PUREX Record Of Decision precedes PUREX tunnel action; process for determining path forward to be resolved – RCRA/CERCLA.
3. CDI ROD (9/02) will determine whether TRU in canyons will be retrieved or disposed in place and whether additional waste will be disposed there.
4. WIPP operates thru 2035.
5. WIPP RH WAC issued in FY2001
6. Store retrieved waste at the 618-10/11 burial grounds until sent to processing/ certification and transferred to WIPP
7. Transfer waste retrieved from the 200 West Caissons to M-91 on a "just in time" basis (no interim storage) starting in 2014.
8. A National Policy Decision will be required to determine disposition of TRU waste after WIPP closes in 2035
9. Develop nondestructive assay for RH TRU.

NOTE: Metrics are included in the Strategic Plan.

TPA Milestones

M-91-00 (TBD) Complete the acquisition of new facilities, modifications of existing facilities, and/or modification of planned facilities necessary for storage, treatment/processing and disposal of all Hanford Site TRU/TRUM, LLMW and GTC3.
M-91-01 (TBE) Complete the acquisition of new facilities, modifications of existing facilities, and/or modification of planned facilities necessary for storage, treatment/processing prior to disposal of all Hanford Site post-1970 TRU/TRUM.
M-91-18 (6/20/01) Transmit the T Plant Sludge Storage Conceptual Design Document (CDD) to the Washington State Department of Ecology.
M-91-19-T01 (9/30/02) Complete physical activities at T Plant necessary to store floor and pit sludge.
M-91-06-T01 (9/30/03) Award necessary privatized contracts for RH and oversized TRU/TRUM.
M-91-21-T01 (11/29/03) Complete physical activities at T Plant necessary to store canister and fuel wash sludge.
M-91-22 (2/29/04) T Plant is ready to receive canister and fuel wash sludge from K Basins.
M-91-T01 (6/30/05) Complete construction and start operation of RH and oversized TRU/TRUM processing.

Legend

D Disposal
P Processing
S Storage
TPA Milestone
Start / Completion (TBD)
Start / Completion
Decision
External Drivers
Technology Inputs
Processing, Storage & Disposal Strategies
Stream Specific Strategies
Potential Alternatives

2/06/01

FY2001 Strategic Plan Master Logic - Liquid Effluents and the 242-A Evaporator

Fluor Hanford

Stream	FY00	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022 & Beyond
	T	Evaporator Operation			Outage Life Extension Upgrades			Continue Evaporator Operation												Cleanout		Transfer for Deactivation	
LERF/ETF																							
200 UP-1 Ground Waster			Continue LERF/ETF Operation		ETF Delisting Petition Approved		ETF Waste Solidification Upgrade Project					LERF Major Life Extension Upgrade Project										200W SALDS D	
K Basins Water																					Cleanout		
242-A Evaporator Process Condensate																						Transfer for Deactivation	
ERDF Leachate					Outage																		
Mixed Waste Disposal Units Leachate																							TBD
Groundwater Monitoring Purge Water					Start Disposal of U & P Listed Waste Codes																		TBD
ORP-WTP Phase I Radioactive Liquid Effluent					Prepare to Receive ORP-WTP Radioactive Liquid Effluent				Receive ORP-WTP Radioactive Liquid Effluent														
ORP-WTP Phase II Radioactive Liquid Effluent																							
Melter Trench Leachate																							
WESF Pool Cell Water																							
200 Area TEDF			Continue TEDF Operation								200 Area TEDF Life Extension Upgrade Project											Transfer to Landlord D	
T Plant Wastewater																							
PFP Wastewater																						200E SALDS	
WESF Wastewater																							
242-A Evaporator Cooling Water																							
222-S Lab Wastewater																							
ORP-WTP Phase I Non-Radioactive Liquid Effluent					Prepare to Receive ORP-WTP Non-Radioactive Liquid Effluent																		
ORP-WTP Phase II Non-Radioactive Liquid Effluent									Receive ORP-WTP Non-Radioactive Liquid Effluent														

Acronyms
Cs – Cesium
DST – Double Shell Tank
ETF – Effluent Treatment Facility
LERF – Liquid Effluent Retention Facility
ORP – Department of Energy Office of River Protection
PFP – Plutonium Finishing Plant
RCRA – Resource Conservation & Recovery Act
SALDS – State Approved Land Disposal Site
Sr – Strontium
TEDF – Treated Effluent Disposal Facility
U&P – "RCRA Listed WasteCodes"
WESF – Waste Encapsulation Storage Facility
WTP – Waste Treatment Plant
ERDF – Environmental Restoration Disposal Facility

Key Assumptions
1. Out-year planning for the 242-A Evaporator is based on one to two campaigns per year according to the Tank Farms Operational Waste Volume Projection
2. No additional cost will be accrued at the Evaporator or the LERF/ETF as a result of the DST's becoming TSCA regulated.
3. Liquid Effluents preparations for receiving the liquid effluents from the ORP-WTP will be funded separately by ORP in the PBS RL-TW08, Infrastructure Support.
4. Waste Management will be responsible for packaging and shipping the capsules from WESF to the ORP-WTP

NOTE: Metrics are included in the Strategic Plan.

Legend

- D Disposal
- T Treatment
- S Storage
- Start / Completion
- Decision
- External Drivers
- Technology Inputs
- Treatment, Storage & Disposal Strategies
- Stream Specific Strategies
- Potential Alternative

12/28/00