Project Baseline Summary Report

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Operations/Field Office: **Richland** Print Date: **3/9/2000**

Site Summary Level: **Hanford Site** HQ ID: **0396**

Project **RL-WM04 / Solid Waste Treatment**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

Purpose: The Solid Waste Treatment project provides onsite and commercial offsite mixed waste treatment, waste verification and repackaging, and decontamination services to customers throughout the Hanford Site. It also provides retrieval of stored transuranic (TRU) waste and processing of transuranic waste in preparation of shipment offsite for disposal at the Waste Isolation Pilot Plant (WIPP). This work supports agreements with the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement, TPA) stakeholders and addresses specific milestones (M-19-00, M-19-01, M-91-00, M-91-01, M-91-03, M-91-04, M-91-05, M-91-06, M-91-07, M-91-08, M-91-11, M-91-12, M-91-13, M-91-14, and M-91-15) for initiating and completing treatment for a variety of low-level waste (LLW), mixed low-level waste (MLLW), transuranic (TRU), and transuranic mixed (TRUM) wastes. Wastes are treated for disposal purposes, typically driven by Resource Conservation and Recovery Act (RCRA) Land Disposal Restrictions (LDR) for MLLW or by WIPP waste acceptance criteria for TRU and TRUM. This work is accomplished through existing facilities on the Hanford Site such as the T Plant complex, the Waste Receiving and Processing (WRAP) Facility, and through offsite commercial treatment contracts. Capital projects associated with mixed waste treatment activities and TRU waste retrieval are also addressed in this project baseline summary.

WASTE RECEIVING AND PROCESSING (WRAP) FACILITY:
This Project Baseline Summary provides for the operation of the WRAP facility. The WRAP facility provides LLW and MLLW verification sampling capability for waste already in storage as well as newly generated waste. The WRAP facility provides verification or characterization required by DOE Order 5820.2/435.1, Washington Administrative Code 173-303 and 40 Code of Federal Regulations 264 for the Low-Level Burial Grounds and RCRA-compliant storage facilities to be able to accept solid waste (drums and boxes) for storage or disposal. Without WRAP operations, stockpiling of solid radioactive wastes could occur across the Hanford site.

WRAP also provides characterization and treatment for TRU/TRUM and suspect TRU waste in above ground and retrievable underground storage at Hanford. The transuranic fraction will be prepared for transport to the WIPP for disposal, while the non-transuranic fraction will be segregated for onsite disposal in the Low Level Burial Grounds or for further processing. Many of the suspect transuranic containers have been underground longer than their design lifetime of 20 years.

T PLANT COMPLEX
The T Plant Complex provides mixed waste treatment, waste verification and repackaging, and decontamination services to customers throughout the Hanford Site. Work is performed at the T Plant Complex which has been providing decontamination services to the site since 1957. The T Plant complex is divided into two sub-complexes, the 221-T canyon facility and the 2706-T complex, which also includes the 214-T chemical storage building. The entire complex is under RCRA interim status as a Treatment and Storage unit. Each of the two complexes has its own unique characteristics that allow for a variety of services to be provided to Hanford Site customers.

The 221-T canyon was originally constructed in 1943 to extract plutonium from reactor fuel. It began a mission as a high-dose decontamination facility in 1957. Throughout the years various pieces of large contaminated equipment have been stored in the canyon. Spent nuclear fuel from the

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decommissioned Shippingport reactor is also stored under water in the canyon. Processing in the canyon also includes items contaminated with alpha-bearing radionuclides. Currently, work in the 221-T canyon includes mixed waste treatment of alpha contaminated waste, and canyon clean-out activities.

The 2706-T Complex began work in 1959 as a low-dose decontamination facility with specific emphasis on large rolling stock equipment. Since then, it has also assumed the mission of verification of LLW and MLLW, treatment of low-dose alpha-bearing MLLW to meet Land Disposal Restrictions (LDR), and TRU/TRUM waste head gas sampling. The facility was expanded in 1992 and 1998 to accommodate the larger demand for its expanded waste treatment services.

Operation of the T Plant Complex also requires standard operations support activities such as training and certification, maintenance, emergency response, equipment upgrades, environmental, safety and health support, and general administrative and management support.

Operation of the T Plant Complex maintains the overall objective of providing decontamination services of high-dose rate waste and contaminated equipment to meet applicable standards for disposal, storage, re-use, or free release. Low-dose rate waste and contaminated equipment is also managed for repair and return to service and supporting site goals in pollution prevention, recycling, waste reduction, and mixed waste treatment. Safe storage of high-dose contaminated equipment and spent nuclear fuel are also provided.

MIXED WASTE TREATMENT PROGRAM
The Mixed Waste Treatment Program provides for the RCRA and Toxic Substances Control Act (TSCA) required treatment and disposal of several categories of mixed waste and the operation of the Radioactive Mixed Waste trenches. The mixed waste covered under this project includes waste to be generated in the future as well as MLLW currently stored on the Hanford Site. The mixed waste treatment program satisfies TPA milestones M-19-00, M-19-01, and M-91-12. The treatment program is governed by TPA milestones M-19 and M-91, which provide for utilization of government and commercial treatment facilities.

TRU WASTE PROGRAM
The TRU Waste Program provides for activities associated with preparing TRU waste for shipment to WIPP. These include obtaining WIPP certification, and characterizing TRU and suspect TRU waste drums. Characterization may include development of acceptable knowledge information, real-time radiography, non-destructive assay, visual examination, head-gas sampling, RCRA sampling, and repackaging if necessary.

PHASE I TRU RETRIEVAL
This Project Baseline Summary provides for the activities associated with retrieval of contact handled, suspect transuranic waste from aboveground or underground storage in the Low-level Burial Grounds. A phased approach to retrieval has been selected and this project addresses Phase I. The waste has been buried in containers that were not intended to be in the ground for more than twenty years. These containers will began exceeding this twenty year period in 1998 and will continue to deteriorate the longer they remain underground. The Record of Decision for the Hanford Defense Waste - Environmental Impact Statement states that the post 1970 transuranic waste must be retrieved. Retrieval of waste is governed by the M-91 set of TPA

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milestones.

CAPITAL PROJECT W-156
This Project Baseline Summary provides for the activities associated with the design, construction, startup, and operation of a facility that will be used to retrieve remote handled transuranic waste from the 218-W-4B Alpha Caissons. The Record of Decision for the Hanford Defense Waste-Environmental Impact Statement states that the post 1970 transuranic waste must be retrieved. Retrieval of waste is governed by the M-91 set of TPA milestones.

CAPITAL PROJECT W-221 (Phase II)
This Project Baseline Summary provides for the activities associated with the design, construction, startup, and operation of a facility that will be used to retrieve contact handled and remote handled transuranic waste from underground storage trenches at the Hanford site. A phased approach to retrieval has been selected and this project addresses Phase II. The waste has been buried in containers that were not intended to be in the ground for more than twenty years. Many of these containers have begun exceeding this twenty-year limit and will continue to deteriorate the longer they remain underground. The Record of Decision for the Hanford Defense Waste-Environmental Impact Statement states that the post 1970 transuranic waste must be retrieved. Retrieval of waste is governed by the M-91 set of TPA milestones.

CAPITAL PROJECT/TREATMENT CONTRACT - M91 FACILITY
This Project Baseline Summary provides for the activities associated with the design, construction, startup, and operation of a facility(ies) or providing for a contract to treat remote-handled (RH) and large box MLLW and TRU waste that is remote handled or requires other special processing. These treatment activities are in support of the M-91 set of TPA milestones.

Scope: Specific project scope from the Hanford Site technical baseline is provided below in terms of the systems that the project has responsibility for.

T-Plant Canyon Facility

· Maintain T Plant Canyon Readiness: Provide for minimum safe operations at the T Plant Waste and Decontamination Services Canyon Facility. This includes 221T and 271T. These activities support compliance and safety requirements. This activity also provides for high-dose and dual survey (beta-gamma and alpha) decontamination services, and spent nuclear fuel storage at the T Plant Canyon Facility. Provides for training and certification of operators.

· Provide T Plant Canyon Facility Mortgage Reduction/Facility Closure: Initiate the transition phase of decontamination and decommissioning for the T-Plant canyon facility.

· Provide Secondary Containment Startup and Readiness: Provides the expense funding and remaining capital expenditures supporting the

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construction of a double contained waste collection system for the 2706-T Decontamination Facility. These wastes are currently managed in the 221-T canyon piping and tank systems, which are not in compliance with federal and state requirements. This project implements Tri-Party Agreement Milestone M-32-03.

· Provide T-Plant Canyon Life Extensions/Upgrades: This activity provides for future activities to support projects to modify the T-Plant Canyon Facility to improve the facility's operation, extend its useful life, ensure regulatory compliance, or correct deficiencies.

2706T

· Maintain 2706-T Facility Readiness: Provide for minimum safe operations at the 2706-T facility. Activities are designed to keep the facility in a safe and compliant status. Maintenance activities will include preventative, corrective, and designated calibration and/or testing services. Training will maintain established qualifications for plant personnel to work in a treatment, storage, and disposal facility.

· Provide 2706-T LLW/LLMW Treatment Services: Provide decontamination and waste verification activities, including low-dose alpha and beta-gamma decontamination, and waste verification in the 2706-T facility. Training and certification that is directly related to decontamination / verification will be provided.

· Provide 2706-T Essential Services: Provide for essential services at the 2706-T Facility. Activities include maintenance of facility and systems, and providing qualified staff to conduct baseline operations.

· Provide 2706-T Life Extensions/Upgrades: This activity provides for future activities to support projects to modify the 2706-T Facility to improve the facility's operation, extend its useful life, ensure regulatory compliance, or correct deficiencies. Eventually this activity will address Post-Operations which will provide for mortgage reduction and facility closure.

M-91 Facility

· Retrieve CH TRU (Phase I/II): Provide support for retrieval of contact handled (CH), suspect Transuranic (TRU) waste from one underground storage trench at the Hanford site. A temporary structure (i.e., greenhouse) will be deployed to provide shelter from the elements and contamination control while drums and boxes are being retrieved from the trench. A phased approach to retrieval has been selected, and addresses Phase I. The waste has been buried in containers that were not intended to be in the ground for more than twenty years. Many of these containers have now exceeded this twenty-year period. The Record of Decision for the Hanford Defense Waste - Environmental Impact Statement (HDW-EIS) states that the post-1970 TRU waste must be retrieved. Phase I will retrieve roughly one third of the CH TRU waste containers stored since 1970 that are expected to be intact, approximately 10,000 drums/boxes. Equipment will be provided to x-ray and assay the waste containers through non-destructive techniques for proper identification of the content to the extent necessary to meet site requirements at an onsite RCRA permitted facility.

Provide support for retrieval of remote handled (RH) suspect Transuranic (TRU) waste from 25 underground storage trenches at the Hanford site. A phased approach has been selected; and Project W-221 addresses Phase II, which is defined as retrieval of all TRU/suspect TRU waste that is not recovered in Phase I TRU Retrieval or Caisson Retrieval (W-156). The waste has been buried in containers that were not intended to be in the ground

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for more than twenty years. Many of these containers have now exceeded this twenty-year period. The Record of Decision for the Hanford Defense Waste -Environmental Impact Statement (HDW-EIS) states that the post-1970 TRU waste must be retrieved. This will enable final closure of the respective burial grounds.

· Retrieve RH TRU: Perform retrieval of remote handled (RH) Transuranic (TRU) waste from the Alpha Caissons. The Record of Decision for the Hanford Defense Waste - Environmental Impact Statement (HDW-EIS) states that the post-1970 TRU waste must be retrieved. A total of 5,500 waste containers are stored in four underground caissons. This will enable the final closure of the respective burial grounds.

· Construct RH/GTC3/MLLW Treatment Facility: Provide for RCRA required treatment and disposal of several categories of radioactive mixed waste (RMW) that will be generated in the future, as well as those currently stored on the Hanford site. RMW waste categories include approximately 250 barrels of hydraulic oil containing polychlorinated biphenyls contaminated with plutonium and contact handled (CH) low level mixed waste (LLMW) currently stored in the Central Waste Complex (CWC) awaiting treatment to comply with land disposal restrictions (LDR). Where possible, direct disposal methods for those wastes currently meeting treatment criteria will be pursued at the Low Level Burial Grounds (LLBG) or in the Environmental Remediation Disposal Facility (ERDF).

This activity supports the completion of Tri-Party Agreement Milestone M-19. Large containers of contact handled, and all remote handled, TRU waste will be processed and/or packaged, and stored until it is shipped offsite for final disposition at WIPP and supports Tri- Party Agreement Milestone M-91.

· Construct RH-TRU Processing Facility: Provide for treatment activities/processes to prepare RH TRU for disposal at WIPP.

· Operate RH/GTC3/MLLW Treatment Facility: Perform RCRA required treatment and disposal activities for several categories of radioactive mixed waste (RMW) that will be generated in the future, as well as those currently stored on the Hanford site. RMW waste categories include approximately 250 barrels of hydraulic oil containing polychlorinated biphenyls contaminated with plutonium and contact handled (CH) low level mixed waste (LLMW) currently stored in the Central Waste Complex (CWC) awaiting treatment to comply with land disposal restrictions (LDR). Where possible, direct disposal methods for those wastes currently meeting treatment criteria will be pursued at the Low Level Burial Grounds (LLBG) or in the Environmental Remediation Disposal Facility (ERDF).

This activity supports the completion of Tri-Party Agreement Milestone M-19. Large containers of contact handled, and all remote handled, TRU waste will be processed and/or packaged, and stored until it is shipped offsite for final disposition at WIPP and supports Tri- Party Agreement Milestone M-91.

· Operate RH-TRU Processing Facility: Perform treatment activities/processes to prepare RH TRU for disposal at WIPP.

· Provide RMW Minimum Treatment Requirements: Provide for minimum treatment requirements of contact handled low level mixed waste to meet RCRA land disposal restrictions.

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· Provide RMW Mortgage Reduction: This activity covers additional treatment volumes, characterization for future treatment, and additional direct disposal volumes to eliminate need for construction of new storage facilities in the 200 Areas. Additional volumes preclude need for new storage capacity in the CWC. Additional characterization is required to define future technology needs. Projections/forecasts of additional volumes for direct disposal are necessary.

Eventually this activity will address Post-Operations which will provide for mortgage reduction and facility closure.

WRAP

· Maintain WRAP Facility Readiness: Provide for minimum safe operations at the Waste Receiving and Processing (WRAP) facility; including surveillance, preventative and corrective maintenance, management/administration, and training activities.

· Maintain WRAP NDE/NDA Verification Capability: Provide for the operational activities to perform the NDE/NDA, LLW and TRU process line operations. NDE/NDA and visual/repackaging will be performed on Low Level Waste (LLW), Transuranic waste (TRU), and LLW/TRU Mixed Waste. LLW will be verified and sent to the burial grounds for disposal. LLW/TRU Mixed Waste will be segregated and sent to storage or treatment. TRU waste will be verified/certified for shipment to the Waste Isolation Pilot Project (WIPP) for disposal.

· Maintain TRU/LLW Processing Capability: Provide for specific solid waste treatment within Waste Receiving and Processing Facility (WRAP). The WRAP facility processes transuranic and suspect transuranic wastes for certification, transportation to, and disposal at the Waste Isolation Pilot Plant. This activity includes gamma-based assay and neutron assay of newly generated and retrieved contact handled transuranics, which is necessary for the overall certification of transuranic wastes within the WRAP.

· Upgrade/Maintain Computer Equipment Interface: Provides for upgrades to waste processing equipment and computer interface equipment at the WRAP facility. These upgrades maintain optimum processing efficiency and assist management in meeting throughput goals envisioned under the original design of the WRAP facility. Upgrades also allow for interface with other waste management information management systems such as the Solid Waste Information Tracking System.

Technical Approach: The end point targets in the Hanford Strategic Plan addressed by this project include:

· Spent fuels consolidated in the 200 Area in safe, stable, cost-effective interim storage pending national decisions on theirultimate disposition.

· Transition high-cost surplus facilities in the central plateau and south 600 areas to a low cost, stable, deactivated condition.

· Retrievably stored TRU waste retrieved, processed, shipped offsite to WIPP.

· Low-level and mixed low-level waste from onsite and offsite sources will continue to be disposed of in the 200 Area.

· Provide safe, stable, interim storage for nuclear materials in the 200 Area pending decisions on their ultimate disposition.

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Project **RL-WM04 / Solid Waste Treatment**

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The technical approach and technology initiatives for the Project to accomplish the Hanford Strategic Plan end point targets are identified below.

· Waste Receiving and Processing Facility (WRAP): WRAP operations are capable of viewing and assaying the contents of 208 liter(55-gallon) and 320 liter (85-gallon) waste drums and standard waste boxes using x-ray Non-Destructive Examination (NDE) and Non-Destructive Assay (NDA). NDE/NDA and visual inspection/repackaging will be performed on LLW, MLLW, TRU, and TRUM waste in four separate process glove boxes. LLW is verified/repackaged and sent to the Low-level Burial Grounds for disposal. MLLW waste is segregated, treated, repackaged, and sent to storage, treatment, or disposal. TRU and TRUM waste is verified/certified/repackaged for shipment to the WIPP for disposal.

· Phase I TRU Retrieval: This project will provide a complete system to retrieve suspect TRU containers that are covered with dirt, free from levels of contamination which would require special features for containment. Equipment will be provided to assay the waste containers through non-destructive techniques to assure that the contents can safely be stored or reprocessed at an onsite RCRA permitted facility.

· Capital Project W-156: The 218-W-4B Alpha Caisson retrieval facility will require remote handling (RH) capability for recovering and repackaging waste from degraded containers. The facility will also be required to provide contamination confinement during all retrieval operations. Waste containers in one caisson have dose rates up to 8,000 R/hr.

· Capital Project W-221: The Phase II Retrieval facility will require RH capability for recovering and repackaging waste from degraded containers and the packaging of contaminated dirt. The facility will also be required to provide contamination confinement during all retrieval operations. Of the remaining Phase II drums and boxes (approximately 19,000 and 630 respectively) it is estimated that 8,000 drums and 530 boxes will be retrieved by facilities identical or similar to the Phase I Retrieval facility. The remainder of the waste contains about 10,000 drums and 100 boxes that have a storage configuration similar to the retrieved in Phase I but will have been in storage significantly longer, are stored on dirt floors, or include a significant number of RH containers.

· Future Capital Project/Treatment Contract - M-91 Facility: Construct facility or provide for a contract to treat RH-TRU wastein support of TPA Milestone M-91

· Mixed Waste Treatment (Commercial):
1. ¸ Procurement of an outside vendor to complete treatment either on the Hanford Site or at the vendors' facilities depending on the project.
2. ¸ Characterization of waste (RTR and sampling) to insure that the vendors' waste acceptance criteria is met.
3. ¸ Shipment of waste to the treatment site.
4. ¸ Treatment of Waste
5. ¸ Return of treated waste for burial at the RMW trenches.

· Mixed Waste Treatment (Onsite): Most mixed waste treatment activities are performed at the 2706-T complex. Specific treatments planned include macroencapsulation of long-length contaminated equipment, stabilization, solidification, and neutralization of mixed waste sludges, soils, and particulates. Wastes are treated to specific federal and state treatment criteria.

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· Performance of High-Dose Alpha/Beta/Gamma Decontamination: Physical and chemical decontamination processes will be used to perform this operation. Materials that are to be recovered are either bathed in chemical baths and wiped down or some combination of the two. Various chemical baths are utilized and new processes are continually being evaluated for waste minimization and greater efficiency purposes. Items are also prepared for disposal by painting or grouting for contamination control and packaging for disposal. This work is performed in the 221-T Canyon where shielding and contamination control are maintained.

· Storage of Contaminated Equipment and SNF: Large contaminated equipment items are stored in the T Plant canyon from other programs pending decisions on final disposal or reuse needs. Spent Nuclear Fuel from the Shippingport decommissioned pressurized water reactor fuel is also stored in the T Plant canyon. Cell 2R was converted into a storage pool in the late 1970's to accept storage of the fuel. The fuel was to be reprocessed in PUREX. The reprocessing mission of PUREX was terminated and the fuel remains in storage in the T Plant canyon. It is currently monitored for physical condition and safe storage parameters until it is removed and stored and part of the Hanford Spent Nuclear Fuels Management Program.

· Canyon Mission Transition Activities: These activities include removal of large contaminated equipment from the T Plant canyon such as pump racks, tanks and waste boxes. These items are prepared for disposal or storage as necessary. Also included in this area is radiation area reduction in the canyon, compliance upgrades, and future mission upgrades. Potential future missions included expanded mixed waste treatment and treatment of remote-handled TRU packages for ultimate disposal at the WIPP site.

· Performance of Low-dose Beta/Gamma Decontamination: This operation is performed in the 2706-T facility. Various physical decontamination methods are employed such as high-pressure spray washing, ice blasting, grinding, painting, and wiping. Materials and equipment are decontaminated for both re-use and recycling. A prime example is the recovery of bulk lead items that are decontaminated and recycled instead of being sent to mixed waste storage. Materials are either free-released from radiological controls or are released to a regulated site use status.

· Waste Verification: Waste drums and boxes are opened or X-rayed to verify that the contents meet applicable storage or disposal criteria. Non-compliant items are removed and packaged for storage and original containers are repackaged for final disposition, either storage or disposal.

Project Status in FY 2006:

T-Plant Canyon Facility

· Upgrade activities to improve the facility operation, extend its useful life, etc. are not needed after facility transitionoccurs.

· Shippingport spent fuel removal occurs in 2001-2002 and is completed prior to 2006 in support of canyon transition. Other transition activities occur prior to 2006.

· Construction of doubly contained waste collection system for 2706-T and subsequent ceasing use of canyon tanks occurs in FY99 in accordance with TPA milestone M-32-03. This activity is complete before 2006.

· The 221-T Canyon transition is completed by 2006 unless a future mission is identified for the facility. Other supporting facilities such as 214-T, etc. continue in operation as needed to support 2706-T readiness.

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· The 2706-T continues to fulfill minimum safe operating requirements. The 2706-T facility structures, operating systems and equipment, and monitoring systems are maintained within the approved safety and compliance requirements until facility transition in 2035.

· Upgrade activities to improve the facility operation, extend its useful life, etc. are performed as needed in 2006.

· The 2706-T continues to treat MLLW in support of various TPA milestones. Treatment is performed in accordance with established RCRA requirements and includes decontamination, waste verification and repackaging, and treatments to meet LDR.

· The 2706-T continues to provide essential services including maintenance of facility and systems, and providing qualified staff to conduct baseline operations. Some essential services are unfunded and will only be provided with advanced notice and supplemental funding.

M-91 Facility

· Initial phase of TRU retrieval activities is completed. Waste retrieved during initial phase is in aboveground storage, orhas been processed for shipment to WIPP. Project W-221 retrieval is in initial phases of construction in 2006. Waste retrieval under project W-221 will not begin until after 2006.

· Minor construction will be completed, or commercial contracts will be placed such that treatment of large container CH MLLW can begin in 2006.

· Treatment of large container CH MLLW will begin in 2006. Treatment of RH MLLW will begin after 2006.

· Preliminary design work will begin in 2006 for Project W-156, caisson waste retrieval. Project W-221 retrieval is in initial phases of construction in 2006. Waste retrieval under projectsW-156 and W-221 will not begin until after 2006.

· Program is continuing to treat received MLLW in support of various TPA milestones. Treatment is performed in accordance with established RCRA requirements.

· The M-91 facility for processing RH TRU/TRUM is in final design and initial construction stages in 2006.

· Processing of RH TRU/TRUM Waste will not begin until after 2006.

· Additional treatment and characterization volumes, above that needed to meet TPA milestones and RCRA commitments, are processed in accordance with established requirements.

WRAP

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· WRAP facility maintains and upgrades processing equipment and computer interface equipment as necessary to meet throughput requirements.

· WRAP facility continues processing CH Post-1970 TRU/TRUM waste from the following anticipated waste streams: newly generated onsite, retrieved suspect TRU, offsite TRU waste requiring WIPP certification. WRAP continues to process LLW/MLLW from various onsite and offsite generators.

· WRAP facility continues to receive, handle, and verify incoming waste using NDE/NDA.

· WRAP facility continues to fulfill minimum safe operating requirements. WRAP facility structures, operating systems and equipment, and monitoring systems will be maintained within the approved safety and compliance requirements until facility transition in 2031.

Post-2006 Project Scope:

T-Plant Canyon Facility

· Upgrade activities to improve the facility operation, extend its useful life, etc. are not needed after facility transition occurs.

· Shippingport spent fuel removal occurs in 2001-2002 and is completed prior to 2006 in support of canyon transition. Other transition activities occur prior to 2006.

· Construction of doubly contained waste collection system for 2706-T and subsequent ceasing use of canyon tanks occurs in FY99 in accordance with TPA milestone M-32-03. This activity is complete before 2006.

· The 221-T Canyon transition is completed by 2006 unless a future mission is identified for the facility. Other supporting facilities such as 214-T, etc. continue in operation as needed to support 2706-T readiness.

2706T

· The 2706-T continues to fulfill minimum safe operating requirements. The 2706-T facility structures, operating systems and equipment, and monitoring systems are maintained within the approved safety and compliance requirements until facility transition in 2035.

· Upgrade activities to improve the facility operation, extend its useful life, etc. are performed as needed after 2006.

· The 2706-T continues to treat MLLW in support of various TPA milestones. Treatment is performed in accordance with established RCRA requirements and includes decontamination, waste verification and repackaging, and treatments to meet LDR.

· The 2706-T continues to provide essential services including maintenance of facility and systems, and providing qualified staff to conduct baseline operations. Some essential services are unfunded and will only be provided with advanced notice and supplemental funding.

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M-91 Facility

· Initial phase of TRU retrieval activities is completed by 2006. Waste retrieval under project W-221 begins in 2007.

· Facility Construction is complete.

· Treatment of large container CH MLLW will begin in 2006. Treatment of RH MLLW will begin after 2006.

· Waste retrieval under project W-156 begins in 2013. Waste retrieval under project W-221 begins in 2007.

· Program is continuing to treat received MLLW in support of various TPA milestones. Treatment is performed in accordance with established RCRA requirements.

· The M-91 facility for processing RH TRU/TRUM completes construction and begins operating after 2006.

· Processing of RH TRU/TRUM Waste will begin in 2007.

· Additional treatment and characterization volumes, above that needed to meet TPA milestones and RCRA commitments, are processed in accordance with established requirements.

WRAP

· WRAP facility maintains and upgrades processing equipment and computer interface equipment as necessary to meet throughput requirements.

· WRAP facility continues processing CH Post-1970 TRU/TRUM waste from the following anticipated waste streams: newly generated onsite, retrieved suspect TRU, offsite TRU waste requiring WIPP certification. WRAP continues to process LLW/MLLW from various onsite and offsite generators.

· WRAP facility continues to receive, handle, and verify incoming waste using NDE/NDA.

· WRAP facility continues to fulfill minimum safe operating requirements. WRAP facility structures, operating systems and equipment, and monitoring systems will be maintained within the approved safety and compliance requirements until facility transition in 2031.

Project End State

Contaminated facilities (i.e., T Plant Canyon, 2706-T, WRAP) are generally cleaned out at the end of their useful lives and turner over to the Facility Stabilization Project for deactivation. Each facility being transitioned must meet certain acceptance criteria, which will vary by facility. A Memorandum of Understanding will be developed with Facility Stabilization. A Facility Turnover Agreement will be developed to document the

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condition of each facility at the time of turnover. A Facility Assessment will be performed as part of turnover.

The Hanford Strategic Plan end point targets achieved at completion of the project include:

Hanford Mission End Point Targets Achieved

· Retrievably stored TRU waste retrieved, processed, shipped offsite to WIPP.

Specific work activities to close the facilities under this Project to be performed by others at the end of this Project's mission are identified below.

T-Plant Canyon Facility
Work associated with facility performed by Accelerated Deactivation:
Maintain Safe & Compliant T-Plant Canyon Facility in CP Areas
Transition T-Plant Canyon Facility
Work associated with facility performed by Decontamination & Decommissioning:
Decontaminate and Decommission (D&D) T-Plant Canyon Facility

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Work associated with facility performed by Decontamination & Decommissioning:
Decontaminate and Decommission (D&D) 2706-T Facility
Work associated with facility performed by Accelerated Deactivation:
Transition 2706-T Decontamination Facility in CP Areas
Maintain Safe & Compliant 2706-T Decontamination Facility in CP Areas

M-91 Facility
Work associated with facility performed by Accelerated Deactivation:
Maintain Safe & Compliant M-91 Facility in CP Areas
Transition M-91 Facility
Work associated with facility performed by Decontamination & Decommissioning:
Decontaminate and Decommission (D&D) M-91 Facility

WRAP
Work associated with facility performed by Accelerated Deactivation:
Maintain Safe & Compliant WRAP Facility in CP Areas
Transition WRAP Facility
Work associated with facility performed by Decontamination & Decommissioning:
Decontaminate and Decommission (D&D) WRAP Facility

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Cost Baseline Comments:

This cost baseline was developed using Activity Based Cost Estimating and resource-loaded schedules. Escalation was applied in accordance with Fluor Daniel Hanford budget guidance.

Safety & Health Hazards:

The project is currently in the operations phase for treatment of LLW, CH-MLLW, and CH-TRU/TRUM, and contains the S&H functions necessary to maintain safe, compliant and operable Solid Waste Treatment facilities in compliance with the authorization basis, surveillances, and maintenance and calibration of safety systems. The project is in the design phase for TRU retrieval and development of facilities to handle RH-MLLW, and RH-TRU/TRUM. The principle hazards in the Solid Wastes Treatment facilities are activities which open, treat, and repackage LLW, LLMW, and TRU, stored quantities of these wastes; retrievably stored TRU, quantities of hazardous chemicals, and aging equipment and infrastructure. The handling of wastes poses a radiological hazard to workers, a potential of contamination spread to the environment, and chemicals could result in potential chemical contamination. In addition, there are safety concerns associated with the aging equipment and facility structures. As the project progresses, workers may encounter electrical hazards due to normal age related deterioration of these facilities. In addition, workers can be expected to encounter normal occupational hazards, e.g., lifting, tripping, crane and rigging, or falls, in each facility within this cluster. These hazards will persist throughout the operations and deactivation phases. In the decommissioning and closure of portions of the project, the principle hazards will involve normal occupational safety hazards related to building demolition, soil remediation, and burial closure cover installation.

Project Stopped Risks

The Solid Waste Treatment facilities provide services to treat mixed wastes for either compliant storage or for final disposal. Not funding treatment requirements prevents operation of the WRAP, T-Plant, and commercial MLLW treatment facilities and prevents design and operation of TRU retrieval projects and RH MLLW and RH-TRU waste facilities. Cessation of T-Plant activities would prevent multiple Hanford site programs from recovering contaminated materials and would increase the amount of material stored or disposed of as low-level and low-level mixed waste. This increases the potential for worker exposure and environmental release as materials build up in limited storage space around the Hanford site. The WRAP facility treats and certifies newly generated and TRU materials and suspect TRU materials. Preventing the operation of the WRAP facility has the same effect as above of forcing increased storage of waste materials around the Hanford site. It has the additional impact of forcing the construction of new facilities to store stockpiled waste materials.

Additional risks are also assumed for the inventory within the treatment facilities as well as increased inventory at the storage facilities that are part of WM-03. It is assumed that increasing inventories at the storage and treatment facilities over time results in increased worker exposures and increased potential for inadvertent releases to the environment. Failure to continue surveillance and monitoring of current waste inventories at treatment facilities are assumed over time to result in containment breaches and subsequent release to the environment. Although risk increases elsewhere on the Hanford site due to unmonitored radiological materials, worker risk within the WRAP and T-Plant facilities decreases in proportion to decreasing activity levels.

Primary risk ranking rationale: For FY2001 a value of 3B-L was chosen for the risk to the public. In the case of a fire and subsequent release of radiological materials, exposure at regulatory limits is possible. The estimated frequency of such an event is between 0.1/year and .01/year given a

Project Description Narratives

complete lack of administrative controls. The same scenario results in a risk of 2B-M for nearby workers. Environmental risks are limited by the containment design of the facilities. However, the same scenario as above results in widespread deposition of radionuclides to uncontrolled areas. This results in a risk ranking of N/A.

Project Implemented Risks

During the implementation of the Solid Waste Treatment Project, a different set of risks are posed. As category 2 nuclear facilities, there is the potential for some public exposure to radionuclides in the case of design basis accidents. The actual risk is very low due to the application of stringent administrative and engineering controls.

The risks are within regulatory limits for worker exposure and adequate engineering and administrative controls are in place for nuclear category 2 facilities. Potential risks include exposure to radiological and hazardous materials due to localized spills. With ALARA controls in place, overexposures are highly unlikely. The WRAP facility operates gamma assay and neutron assay equipment. Malfunction of these equipment items creates the potential for significant worker overexposure. However, stringent controls in their operation and maintenance ensure this event remains extremely unlikely. The T-Plant facilities are over 50 years old and were not designed to current industrial safety standards. This increases the likelihood of industrial related accidents and injuries. This is mitigated through awareness training and plant upgrades where practicable. It is assumed that risks associated with the M-91 facilities, TRU retrieval, and commercial MLLW treatment will be of similar magnitude to those at T Plant and WRAP.

Risk of serious environmental release is minimal. Neither WRAP nor T-Plant maintains significant quantities of hazardous materials that could create a serious environmental release. Additionally, both facilities operate under the requirements of a Part A RCRA permit, which places controls on the handling and containment of hazardous materials.

Primary risk ranking rationale: All risks are reduced to a N/A ranking according to the management evaluation matrix. Both the probability and consequence of postulated events decrease under normal operations.

At the end of the EM-30 clean-up mission in FY2046, this project would be transferred to another function for continued operations and maintenance until subsequent closure, decontamination, and decommissioning (D&D). Additional risk reductions occur after D&D is complete, but this occurs outside of the duration and scope of this project.

Safety & Health Work Performance:

Covered in PBS RL-WM03 for the Waste Management Project.

PBS Comments:

The target level funding reflected in section B.1 is different than the baseline budget contained in this PBS, and reflects reductions in scope that would be taken from this project if needed enhanced performance targets are not realized for the site to meet the overall anticipated funding level. Specific impacts in FY 1999 and their consequence would be:

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Project **RL-WM04 / Solid Waste Treatment**

Project Description Narratives

Not funding activities that are required to meet current TPA milestones. The milestones that will be missed are M-91-02 "Initiate processing of contact handled TRU and TRUM at WRAP"; M-91-04 "Complete construction and initiate operations of the TRU retrieval"; M-91-10 "Submit Hanford Site LLMW waste Project Management Plan (PMP) to Ecology" and M-32-03 "Provide Secondary Containment at T Plant". This delayed completion of these milestones would alienate regulators and stakeholders and put DOE at risk for significant fines.

(M91 Compliance-MW Treatment /Wrap Operations...5,016K)
(Phase I TRU retrieval....3,150K)
(W-259 T Plant Sec. Containment Ess. Services...595K)
(SW Treatment Life Extension....500K)

Baseline Validation Narrative:

During September 1998, the DOE conducted an exhaustive review of the project baseline. The purpose of the review was to ensure that Activity Based Cost Estimating methodologies were utilized, the planning bases were sound, and the results were adequately documented. Comprehensive interviews were also conducted with key members of the project team. Relatively minor changes have been included in routine baseline changes.

TECHNICAL APPROACH REFERENCE DOCUMENTS
- Waste Management Project Fiscal Year 1999 Multi-Year Work Plan WBS 1.2, HNF-SP-1229 Rev. 2
- Hanford Site Technical Database (HSTD)

General PBS Information

Project Validated? Yes **Date Validated:** 9/29/1998

Has Headquarters reviewed and approved project? Yes

Date Project was Added: 12/1/1997

Baseline Submission Date:

FEDPLAN Project? Yes

Drivers:

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
Y	Y				Y	Y	Y

Project Identification Information

DOE Project Manager: Helen E. (Beth) Bilson

DOE Project Manager Phone Number: 509-376-1366

DOE Project Manager Fax Number: 509-372-1926

Project Baseline Summary Report

Data Source: **EM CDB** Report Number: **GEN-01b**

Operations/Field Office: **Richland** Print Date: **3/9/2000**

Site Summary Level: **Hanford Site** HQ ID: **0396**

Project **RL-WM04 / Solid Waste Treatment**

General PBS Information

DOE Project Manager e-mail address: Helen_E_Beth_Bilson@rl.gov

Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
PBS Baseline (current year dollars)	572,791	1,991,306	2,564,097	42,886	40,753	36,698	33,892	31,547	38,532	55,298	60,156	70,262	85,387	76,922	75,103
PBS Baseline (constant 1999 dollars)	531,528	1,287,476	1,819,004	42,886	40,753	36,698	33,892	31,547	37,739	52,995	56,409	64,468	76,659	67,573	64,554
PBS EM Baseline (current year dollars)	572,791	1,991,306	2,564,097	42,886	40,753	36,698	33,892	31,547	38,532	55,298	60,156	70,262	85,387	76,922	75,103
PBS EM Baseline (constant 1999 dollars)	531,528	1,287,476	1,819,004	42,886	40,753	36,698	33,892	31,547	37,739	52,995	56,409	64,468	76,659	67,573	64,554

	2007	2008	2009	2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
PBS Baseline (current year dollars)	70,448	79,840	67,809	70,832	394,372	364,422	406,311	390,090	147,182	0	0	0				
PBS Baseline (constant 1999 dollars)	59,250	65,703	54,601	55,808	291,223	241,362	241,362	207,835	70,332	0	0	0				
PBS EM Baseline (current year dollars)	70,448	79,840	67,809	70,832	394,372	364,422	406,311	390,090	147,182	0	0	0				
PBS EM Baseline (constant 1999 dollars)	59,250	65,703	54,601	55,808	291,223	241,362	241,362	207,835	70,332	0	0	0				

Project Baseline Summary Report

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Project **RL-WM04 / Solid Waste Treatment**

Baseline Escalation Rates

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
0.00%	0.00%	0.00%	2.10%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%

2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%				

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project: 9/30/2035

Current Projected End Date of Project: 9/30/2035

Explanation of Project Completion Date Difference (if applicable):

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	1,482,599	**Actual 1997 Cost:**	40,753	**Actual 1998 Cost:**	33,892
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	1,407,954	**Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):**			38,015
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	1,445,969				

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):		
Cost Growth Associated with Scope Previously Reported (+):		
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	1,445,969	

Project Baseline Summary Report

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Project **RL-WM04 / Solid Waste Treatment**

Project Reconciliation

Additional Amount to Reconcile (+):	293,451
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	**1,739,420**

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
COMPLETE IDENTIFIED DANGEROUS WASTE TANK CORRECTIVE ACTIONS	A2H-99-003	9/30/1999	9/30/1999	9/30/1999			Y				
COMP TREATMENT/DISPOSAL OF 1,644 CM OF CH-LLMW	A2G-02-003	9/30/2002	9/30/2002	9/30/2002			Y				
COMPLETE ALL FACILITIES FOR HANDLING TRU/TRUM, LLMW & GTC3	A6M-49-002	12/31/2049	12/31/2049	12/31/2049			Y				
COMPLETE CONSTRUCTION OF CH TRU/TRUM RETRIEVAL FACILITY	A2J-00-001	9/30/2000	9/30/2000	9/30/2000			Y				
COMPLETE FACILITIES PRIOR TO DISPOSAL OF POST-1970 TRU/TRUM	A6M-49-001	12/30/2049	12/30/2049	12/31/2049			Y				
COMPLETE FACILITIES/INITIATE TREATMENT OF RH/CH-LLWM	A2G-08-109	6/30/2008	6/30/2008	6/30/2008			Y				
COMPLETE T PLANT TANK ACTIONS	A2H-99-002	9/30/1999	9/30/1999	9/30/1999			Y				
COMPLETE W-113 FOR POST 1970 CH TRU/TRUM RETRIEVAL	A2J-04-002	9/30/2004	9/30/2004	9/30/2004			Y				
INITIATE PROCESSING OF CH-TRU/TRUM AT WRAP 1	A2F-99-001	12/31/1998	12/31/1998	12/31/1998		12/3/1998	Y				
INITIATE THERMAL TREATMENT OF CH-LLMW	A2G-01-104	12/31/2000	12/31/2000	12/31/2000			Y				
INITIATE TREATMENT OF CH-LLMW	A2G-99-002	9/30/1999	9/30/1999	9/30/1999			Y				
SUBMIT LLMW & GTC3 PMP TO ECOLOGY (HAN-CJB-2)	A2G-99-101	6/30/1999	6/30/1999	6/30/1999			Y				
SUBMIT TRU/TRUM PMP TO ECOLOGY	A2G-00-102	6/30/2000	6/30/2000	6/30/2000			Y				
COMPLETE SCHEDULED UPGRADES TO T-	AB1-99-T02	9/30/1999	9/30/1999								

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Project **RL-WM04 / Solid Waste Treatment**

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
PLANT TANK SYSTEM (PROJ. W-259)											
Begin Solid Waste Treatment Project	PBS-97-011		2/28/1997								
PBS Mission Completion	PBS-MC-011		9/30/2035								
PBS Project End	PBS-PE-011		9/30/2035								

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
COMPLETE IDENTIFIED DANGEROUS WASTE TANK CORRECTIVE ACTIONS	A2H-99-003										Complete identified dangerous waste tank corrective actions. Completion of interim milestone tasks may identify the need for additional actions or interim milestones.
COMP TREATMENT/DISPOSAL OF 1,644 CM OF CH-LLMW	A2G-02-003										Complete treatment and/or direct disposal of at least 1644 cubic meters of contact handled low level mixed waste already in storage, as well as newly generated Hanford Site low level mixed waste. Cumulative treatment and/or direct disposal rates will be
COMPLETE ALL FACILITIES FOR HANDLING TRU/TRUM, LLMW & GTC3	A6M-49-002										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, LLMW, and GTC3 waste.
COMPLETE CONSTRUCTION OF CH TRU/TRUM RETRIEVAL	A2J-00-001										Complete construction of small container contact handled (CH)

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Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
FACILITY											TRU/TRUM Retrieval Facilities and initiate retrieval of small container TRU/TRUM from 200 Area burial grounds.
COMPLETE FACILITIES PRIOR TO DISPOSAL OF POST-1970 TRU/TRUM	A6M-49-001										Complete the acquisition of new facilities, modification of existing facilities, and/or modification of planned facilities necessary for storage, and treatment/processing before disposal of all Hanford Site Post- 1970 TRU/TRUM.
COMPLETE FACILITIES/INITIATE TREATMENT OF RH/CH-LLWM	A2G-08-109										Complete acquisition of facilities and initiate treatment of RH and large container (CH) LLMW.
COMPLETE T PLANT TANK ACTIONS	A2H-99-002										Complete T Plant tank actions.
COMPLETE W-113 FOR POST 1970 CH TRU/TRUM RETRIEVAL	A2J-04-002										Complete Project W-113 for post-1970 CH TRU/TRUM retrieval as described in TPA milestone M-91-07.
INITIATE PROCESSING OF CH-TRU/TRUM AT WRAP 1	A2F-99-001										Initiate processing of contact handled TRU/TRUM waste at the Waste Receiving and Processing Facility/WRAP 1 (contact handled, small container).
INITIATE THERMAL TREATMENT OF CH-LLMW	A2G-01-104										Initiate thermal treatment of currently stored and newly generated CH LLMW. At least 600 cubic meters wll be provided for treatment by 12/2000.
INITIATE TREATMENT OF CH-LLMW	A2G-99-002										Initiate treatment of contact handled low level mixed waste.

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Project **RL-WM04 / Solid Waste Treatment**

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
SUBMIT LLMW & GTC3 PMP TO ECOLOGY (HAN-CJB-2)	A2G-99-101										Submit Hanford Site LLMW and Greater Than Class 3 (GTC3) Waste Project Management Plan (PMP) to Ecology pursuant to agreement action plan section 11.5.
SUBMIT TRU/TRUM PMP TO ECOLOGY	A2G-00-102										Submit Hanford Site TRU/TRUM Waste Project Management Plan (PMP) to Ecology pursuant to agreement section 11.5.
COMPLETE SCHEDULED UPGRADES TO T-PLANT TANK SYSTEM (PROJ. W-259)	AB1-99-T02										Complete scheduled upgrades to T Plant tank system (Project W-259).
Begin Solid Waste Treatment Project	PBS-97-011			Y							Administrative input to document the start of this PBS.
PBS Mission Completion	PBS-MC-011					Y					Administrative input to document the mission completion of this PBS.
PBS Project End	PBS-PE-011				Y						Administrative input to document the project end of this PBS.

Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planne 20(
TRU														
Treatment	M3	4,909.25	16,435.17	21,344.42	0.00		0.00		182.00	390.00	883.15	465.04	518.50	673.8
TRU														
Ship. to WIPP	M3	4,233.88	13,988.02	18,221.90					21.84	131.04	785.30	751.12	509.53	610.3
MLLW														
Treatment	M3	8,071.99	25,421.57	33,493.56	0.00		0.00		592.00	499.99	917.00	917.00	1,221.00	1,219.(

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Project **RL-WM04 / Solid Waste Treatment**

Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planne 20(
MLLW														
Storage	M3								4,364.39					
LLW														
Treatment	M3	0.00	180.00	180.00	0.00		0.00							
Tech.														
Deployed	Ntd	0.00	0.00	0.00										

Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035
TRU													
Treatment	M3	673.87	751.40	1,045.29	942.23	1,062.51	1,182.52	1,052.48	4,124.66	3,089.16	2,257.25	1,967.34	757.02
TRU													
Ship. to WIPP	M3	610.34	649.67	775.03	903.62	907.43	1,028.62	1,028.24	3,771.84	2,637.82	1,666.29	1,420.77	623.41
MLLW													
Treatment	M3	1,219.00	1,344.00	1,362.00	1,461.25	1,561.09	1,561.42	1,639.83	7,690.70	6,456.01	3,021.79	1,724.17	305.31
MLLW													
Storage	M3												
LLW													
Treatment	M3					180.00							
Tech.													
Deployed	Ntd												

Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total

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Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total
TRU										
Treatment	M3									21,338.42
TRU										
Ship. to WIPP	M3									18,200.06
MLLW										
Treatment	M3									32,939.56
MLLW										
Storage	M3									
LLW										
Treatment	M3									192.00
Tech.										
Deployed	Ntd								4.00	4.00

Release Sites

Site Code	RSF ID	Change Flag	Description	Class/Subclass Name	Planned Assess. Year	Forecast Assess. Year	Actual Assess. Date	Planned Comp. Year	Forecast Comp. Year	Actual Comp. Date	Acc. Year	No Action	Comp. Status	RAD
HASI	8349	R	200-W-20, 2706-T Railroad Pit Sump, T Plant Complex	/										
HASI	8350	R	200-W-36,TK-SQ-143, EP 211-143	/										
HASI	8351	R	200-W-40, 292-T, Emission Control Lab, Stack Gas Sampling Building	/										
HASI	8352	R	200-W-45, 291-T Sand Filter, T Plant Stack Sand Filter	/										
HASI	8353	R	200-W-47, 211-T Storage Pad 90-Day Waste Accumulation Area	/										
HASI	8354	R	200-W-50, 2706-T 90-Day Waste Accumulation Area	/										

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Site Summary Level: **Hanford Site**

HQ ID: **0396**

Project **RL-WM04 / Solid Waste Treatment**

Release Sites

Site Code	RSF ID	Change Flag	Description	Class/Subclass Name	Planned Assess. Year	Forecast Assess. Year	Actual Assess. Date	Planned Comp. Year	Forecast Comp. Year	Actual Comp. Date	Acc. Year	No Action	Comp. Status	RAD
HASI	8355	R	216-T-29, 291-T Sand Filter Sewer, 216-T-29 French Drain	/										
HASI	8356	R	221-T-11-R, 221-T-TK-11-R, Tank 11-R 221-T System, T Plant Complex	/										
HASI	8357	R	221-T-15-1, 221-T-TK-15-1, Tank 15-1 221-T System, T Plant Complex	/										
HASI	8358	R	221-T-5-6, 221-T-TK-5-6, Tank 5-6 221-T System, T Plant Complex	/										
HASI	8359	R	221-T-5-7, 221-T-TK-5-7, Tank 5-7 221-T System, T Plant Complex	/										
HASI	8360	R	221-T-5-9, 221-T-TK-5-9, Tank 5-9 221-T System, T Plant Complex	/										
HASI	8361	R	221-T-6-1, 221-T-TK-6-1, Tank 6-1 221-T System, T Plant Complex	/										
HASI	8362	R	2607-W3	/										
HASI	8363	R	2607-W4, T Plant Septic Tank and Drain Field	/										
HASI	8364	R	UPR-200-W-2, UN-200-W-2	/										
HASI	8365	R	UPR-200-W-65, Contamination in the T-Plant Railroad Cut, UN-200-W-65	/										
HASI	8366	R	UPR-200-W-73, Contaminated Railroad Track at 221-T, UN-200-W-73	/										
HASI	8367	R	UPR-200-W-85, Radioactive Spill from Multipurpose Transfer Box, UN-216-W-85, UN-200-W-85	/										
HASI	8368	R	UPR-200-W-98, UN-216-W-6, 221-T at R-19 Waste Line Break, UN-200-W-98	/										

Release Sites

Site Code	RSF ID	Change Flag	Description	Class/Subclass Name	Planned Assess. Year	Forecast Assess. Year	Actual Assess. Date	Planned Comp. Year	Forecast Comp. Year	Actual Comp. Date	Acc. Year	No Action	Comp. Status	RAD
HASI	8369	R	WRAP, Waste Receiving and Processing Facility	/										

Technology Needs

Site Need Code: RL-MW04

Site Need Name: Remote Decontamination of RH-TRUW Debris to Support Reclassification into Non-TRUW Category

Focus Area Work Package ID: MW-03 **Focus Area Work Package:** Handling Mixed Waste Contaminated Materials During Characterization, Treatment, Packaging, and Disposal

Focus Area: MWFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Mechanical Systems - Evaluation of Technologies for Sorting, Size-Reduction and Handling (SSH) of Mixed Wastes		
Mechanical Systems - Remote and Automation Technology Needs Investigation		
Mechanical Systems - Adaptation and Development of Size Reduction Equipment for Remote Handled Waste		

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01566: HAN05 - RH-TRU Stored/New	Y	N

Site Need Code: RL-MW05

Site Need Name: Remote Treatment of RH Soils and Other Solid Wastes Contaminated With Organics.

Focus Area Work Package ID: MW-07 **Focus Area Work Package:** Alternatives to Incineration to Reduce Emission Hazards.

Focus Area: MWFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both):

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Technology Needs

Direct Chemical Oxidation

Salt and Ash Stabilization - Stabilize Waste using Phosphate Ceramic Process

Polymer Microencapsulation

Electrolytic Treatment of Mixed Waste

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01508: -	Y	N

Site Need Code: RL-MW01

Site Need Name: Remote Macroencapsulation of RH MLLW Debris

Focus Area Work Package ID: MW-03 **Focus Area Work Package:** Handling Mixed Waste Contaminated Materials During Characterization, Treatment, Packaging, and Disposal

Focus Area: MWFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both):

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Stabilized Contaminants using Envirocare Polymer Macroencapsulation

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01508: -	Y	N

Site Need Code: RL-MW02

Site Need Name: Remotely Controlled Size and Volume Reduction Techniques for RH MLLW and RH TRUW.

Focus Area Work Package ID: **Focus Area Work Package:**

Focus Area: **Agree with Technology Link:** N

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Technology Needs

Site Need Code: RL-MW03

Site Need Name: Remote Characterization to Distinguish TRUW from Non-TRUW Portions of Various-Sized Debris in a High Beta/Gamma Field

Focus Area Work Package ID: MW-01 **Focus Area Work Package:** Nondestructive Characterization for Treatment, Transportation, and Disposal of MLL and MTRU Waste.

Focus Area: MWFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Solutions for TRU Waste Streams without Disposition Options		

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01566: HAN05 - RH-TRU Stored/New	Y	N

Site Need Code: RL-MW06

Site Need Name: Treatment of CH TRUW Liquid Wastes Contaminated With PCBs and Ignitables.

Focus Area Work Package ID: MW-07 **Focus Area Work Package:** Alternatives to Incineration to Reduce Emission Hazards.

Focus Area: MWFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Both

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Direct Chemical Oxidation		

Technology Needs

Site Need Code: RL-MW013

Site Need Name: Non-Destructive Assay (NDA) of RH TRUW (High Beta/Gamma Field) to Meet WIPP Requirements

Focus Area Work Package ID: MW-01 **Focus Area Work Package:** Nondestructive Characterization for Treatment, Transportation, and Disposal of MLL and MTRU Waste.

Focus Area: MWFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Characterization of Remote-Handled Waste Drums using High Speed Neutron Detectors		
Characterization of Remote - Handled Waste Drums using Multi Detector Analysis System		
Characterization of Remote-Handled Drums using Radio-Frequency Quadrupole (RFQ) Based Active Neutron Interrogation		

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01566: HAN05 - RH-TRU Stored/New	Y	N

Site Need Code: RL-MW014

Site Need Name: Technology to Dispose of 12 Drums of Pu238 (500 g/drum)

Focus Area Work Package ID: MW-03 **Focus Area Work Package:** Handling Mixed Waste Contaminated Materials During Characterization, Treatment, Packaging, and Disposal

Focus Area: MWFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both):

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Solutions for TRU Waste Streams without Disposition Options		
Solutions for TRU Waste Streams without Disposition Options		

Technology Needs

Site Need Code: RL-MW015

Site Need Name: System to Determine the Integrity of TRUW Drums During Retrieval

Focus Area Work Package ID: MW-05 **Focus Area Work Package:** Payload Enhancement for Transporting TRU Waste within Restrictive Regulatory Limits

Focus Area: MWFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Both

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Solutions for TRU Waste Streams without Disposition Options		

Site Need Code: RL-MW016

Site Need Name: System to Retrieve RH TRUW from Caissons

Focus Area Work Package ID: MW-03 **Focus Area Work Package:** Handling Mixed Waste Contaminated Materials During Characterization, Treatment, Packaging, and Disposal

Focus Area: MWFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Mechanical Systems - Remote and Automation Technology Needs Investigation		
Mechanical Systems - Adaptation of HANDSS-55 Technology for Repackaging of Remote-Handled Wastes		

Technology Needs

Site Need Code: RL-MW017

Site Need Name: Treatment of MLLW Batteries

Focus Area Work Package ID: MW-08 **Focus Area Work Package:** Facilitating Deployment for Unique Wastes

Focus Area: MWFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both):

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Stabilized Contaminants using Envirocare Polymer Macroencapsulation		

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01506: -	Y	N

Site Need Code: RL-MW018

Site Need Name: Treatment of MLLW Mercury Wastes

Focus Area Work Package ID: MW-02 **Focus Area Work Package:** Treatment and Stabilization Alternative for Hg Bearing Mixed Waste

Focus Area: MWFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both):

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Mercury Contamination - Amalgamate Mercury (contract with NFS and ADA)		
Stabilization of Mercury Using Sulfur Polymer Cement		
Separation of Mercury		
Mercury Removal Using General Electric Process		
Mercury Contamination - Separate and Remove Mercury using Polymer Filtration		
Mercury Contamination - National Treatment Initiative Support		
Mercury Wastes - >260ppm		

Project Baseline Summary Report

Data Source: **EM CDB** Report Number: **GEN-01b**

Operations/Field Office: **Richland** Print Date: **3/9/2000**

Site Summary Level: **Hanford Site** HQ ID: **0396**

Project **RL-WM04 / Solid Waste Treatment**

Technology Needs

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01507: -	Y	N

Site Need Code: RL-MW019

Site Need Name: Stabilization Mixing System (T-Plant)

Focus Area Work Package ID: MW-08 **Focus Area Work Package:** Facilitating Deployment for Unique Wastes

Focus Area: MWFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both):

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Salt and Ash Stabilization - Stabilize Waste using Phosphate Ceramic Process		
Stabilization of Salt Using Encapsulation with Polyester Resin		
Salt and Ash Stabilization - Stabilize High Salt Content Waste Using Sol Gel Process		
Salt and Ash Stabilization - Stabilize Ash using Clemson´s Sintering Process		
Salt and Ash Stabilization - Stabilize High Salt Content Waste Using Polysiloxane Process		
Developmnet of ICF Stabilization Technologies		

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01503: -	Y	N

Project Baseline Summary Report

Data Source: **EM CDB** Report Number: **GEN-01b**

Operations/Field Office: **Richland** Print Date: **3/9/2000**

Site Summary Level: **Hanford Site** HQ ID: **0396**

Project **RL-WM04 / Solid Waste Treatment**

Technology Needs

Site Need Code: RL-MW025

Site Need Name: Non-Destructive Assay (NDA) of CH TRUW to Meet WIPP Requirements for Burial Boxes - Certification of Deployed Boxed Waste Assay System (BWAS)

Focus Area Work Package ID: MW-01

Focus Area Work Package: Nondestructive Characterization for Treatment, Transportation, and Disposal of MLL and MTRU Waste.

Focus Area: MWFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Both

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
NDA of Boxes Containing TRU Waste		
Characterization - Crate Surrogates		

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01562: HAN-02 - CH TRU Suspect Boxes	Y	N
	01563: HAN-03 - CH TRU Stored/New	Y	N

Technology Deployments

	Deployment Year		
Deployment Status	**Planned**	**Forecast**	**Actual Date**
Technology Name: Boxed Waste Assay System (BWAS)			
Deployment Commitment	1998		
Technology Name: Glovebox X-Ray System for Packet NDE			
Deployment Commitment	1998		
Technology Name: Glovebox Passive Neutron Assay NDA			
Deployment Commitment	1998		

Project Baseline Summary Report

Data Source: **EM CDB**
Report Number: **GEN-01b**
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Site Summary Level: **Hanford Site**
HQ ID: **0396**
Project **RL-WM04 / Solid Waste Treatment**

Technology Deployments

	Deployment Year		
Deployment Status	**Planned**	**Forecast**	**Actual Date**
Technology Name: Drum Lidder/Delidder for Waste Receiving and Processing (WRAP)			
Deployment Commitment	1998		