

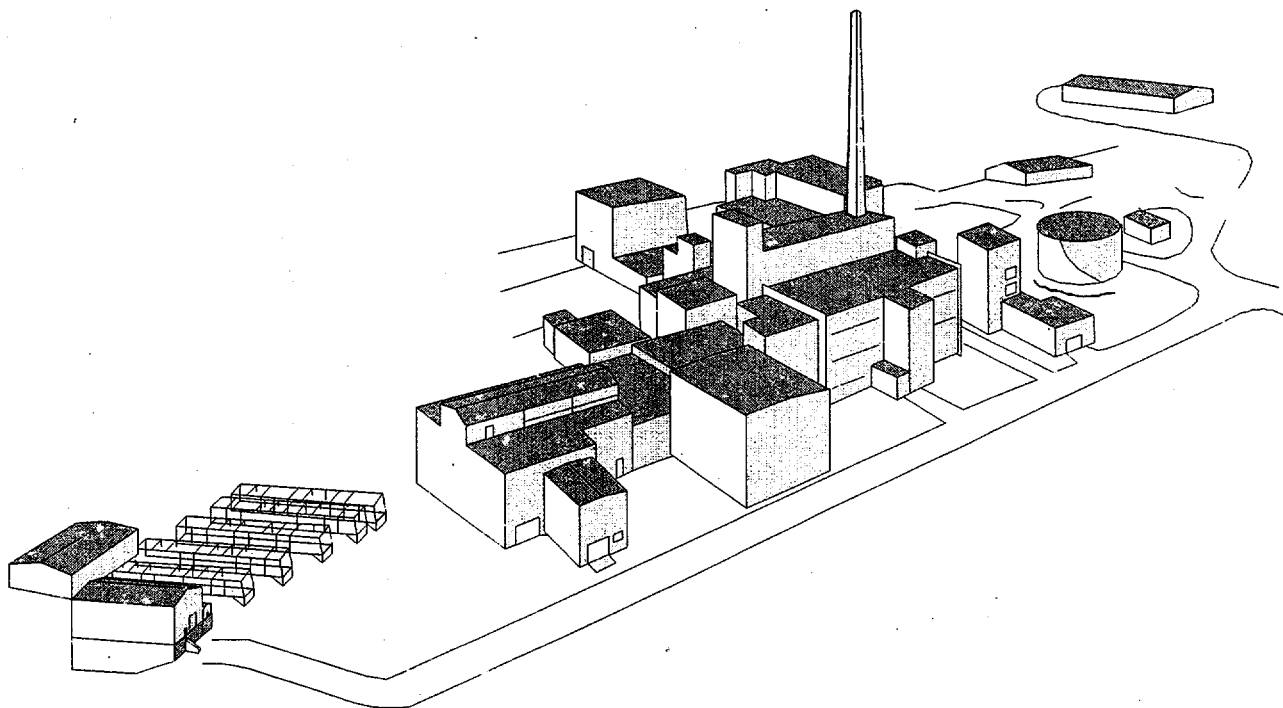


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West Valley Nuclear Services Company

WASTE MANAGEMENT PLAN



WVDP-019

West Valley Demonstration Project

West Valley, New York 14171

West Valley Demonstration Project

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Waste Management Plan

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WASTE MANAGEMENT PLAN

1.0 INTRODUCTION

1.1 Introduction

Completing the West Valley Demonstration Project (WVDP), shrinking the site footprint, and reducing risks and costs associated with the maintenance of facilities and property will require proper management and eventual disposal of WVDP wastes. Generating, storing, shipping, and disposing of these wastes will require meeting criteria established by the Department of Energy (DOE), Nuclear Regulatory Commission (NRC), Department of Transportation (DOT), and other federal and state agencies.

Since the beginning of the Project, West Valley Nuclear Services (WVNS) has safely, effectively, and efficiently conducted on-site waste management operations and has made substantial progress in shipping and disposal of Project wastes. In 1998 Waste Management (WM) entered a phase of re-engineering to focus on the programmatic aspects of timely, effective management of all radioactive low-level waste (LLW) and transuranic (TRU) waste, from generation through final disposition. The re-engineering focused on management of radioactive wastes; however, the principles are also applied to management of hazardous and non-hazardous Project wastes.

1.2 Purpose

To present the waste program at the WVDP, describe the program's direction, identify the Project's strategy for managing waste, and is a guideline for the WVDP Radioactive Waste Management Basis (RWMB).

This Plan describes the WVDP management strategy for LLW and TRU waste. The disposal options and alternatives discussed in this Plan were selected because they represent alternatives for waste streams to be managed as the Project moves forward.

1.3 Mission and Vision

The Project's mission is based upon the WVDP Act, which prescribes the removal and vitrification of radioactive high-level waste (HLW), transportation of HLW to a federal repository, the disposal of LLW and TRU waste produced, in part, by the solidification of the HLW and the decontamination and decommissioning of tanks, facilities, materials, and hardware used in connection with the Project.

The vision of WM is to safely generate, store, and ship wastes for disposal with a philosophy based on the principles of waste minimization, As Low As Reasonably Achievable (ALARA) guidelines, regulatory compliance, and cost effectiveness.

To achieve this vision, WM's objectives are:

- Package all newly generated waste in disposal ready configurations.
- Increase the use of life-cycle based decision making and innovative treatment technologies to carry out cost effective WM activities.
- Reduce on-site waste inventories to avoid the need for construction of new waste storage facilities.
- Promote up front planning, participation, and responsibility of waste generators.
- Enhance waste characterization, procedures, equipment, handling, packaging, and shipping to reduce process time.
- Obtain approval to dispose of WVDP wastes at DOE facilities (e.g., Nevada Test Site [NTS], Hanford, Waste Isolation Pilot Plant [WIPP]).

The priorities set for accomplishing these objectives reflect WVNS's commitment to protecting workers, the public, and environment while meeting the DOE's complex-wide goals and objectives.

1.4 Regulatory Information

In July 1999, the DOE revised the order for radioactive waste management by issuing DOE Order 435.1, "Radioactive Waste Management" and a manual with the new Order, DOE Manual 435.1, "Radioactive Waste Management Manual." This revision supercedes DOE Order 5820.2A, "Radioactive Waste Management."

The new components of the order have been incorporated in the Project's waste management operations.

In addition to DOE Orders, WVDP operations are bound by the following governing documents:

- Cooperative Agreement between the U.S. DOE and New York State Energy Research and Development Authority, signed November 3, 1980.
- Memorandum of Understanding between the U.S. DOE and the U.S. Nuclear Regulatory Commission (NRC), signed September 22, 1981.
- Stipulation of Compromise between the Coalition on West Valley Nuclear Wastes and Radioactive Waste Campaign and the Department of Energy, signed May 27, 1987.
- RCRA 3008(e), Part A Application submitted on June 4, 1990.
- West Valley Demonstration Project Act, signed October 1, 1980.

- Resource Conservation Recovery Act (RCRA) 3008(h) Order on Consent, signed by U.S. EPA on March 2, 1992.
- Federal Facility Compliance Act of 1992, Order of Consent signed September 3, 1996.

2.0 WASTE MANAGEMENT PROGRAM

2.1 Waste Management Organization and Administration

Waste characterization, packaging, storage, inspections, shipping, off-site laboratory contracts, and associated documentation is the responsibility of WM. WM is in the Site Closure Projects Department and is comprised of Waste Characterization Services (WCS) and Waste Management Operations (WMO). In April 2001, Waste Disposition Programs (WDP), formerly Waste Disposition Services, was split from WM and placed under the Environmental, Regulatory Affairs, and Quality Assurance Department. Other site organizations that provide WM with oversight and/or support functions are Quality Assurance (QA), Environmental Affairs (EA), Radiation Protection (RP), Industrial Safety and Emergency Management, and Records and Information. (See Appendix A)

2.2 Waste Management Plan Development

Waste sources, types, and volumes are defined to help determine the size, scope, priority, and perspective of this Plan's development. By preparing this information, trends, constraints, assumptions, and lessons learned that may affect planning and decision making can be better understood and therefore integrated into Plan development processes. This Plan identifies anticipated WVDP waste streams and describes the arena in which disposal of these waste streams can be carried out.

The WVDP has access to both commercial and government disposal facilities. The WVDP was created to manage wastes resulting from Atomic Energy Commission (AEC) licensed spent fuel reprocessing operations that, in part, involved processing AEC/Hanford spent nuclear fuel.

In addition, as a federal agency, the DOE is required to evaluate the impact major actions may have on the environment, as prescribed by the National Environmental Policy Act (NEPA).

2.3 Fiscal Year (FY) 2000 Waste Management Program Highlights

WM is constantly improving its methods of servicing the Project's needs. As part of the ongoing WM process improvement, a substantial re-engineering effort was initiated in 1998 and continued into FY2000.

The re-engineering program included development of the Integrated Waste Tracking System (IWTS); "Touch Waste Once" philosophy; waste acceptance criteria for radioactive wastes; shipment of LLW to Envirocare, Inc.;

waste compaction; published strategic plan that identified and evaluated disposal alternatives for LLW, TRU, HLW, and mixed low-level waste (MLLW); impact assessment of the new DOE Order 435.1; and development of radioactive waste records management program and waste certification program to permit acceptance of WVDP wastes at DOE disposal sites (e.g., NTS). The basic steps implemented to date are:

- *Baseline:* Established a database for use by work planners.
- *Strategic Plan:* Established the direction for waste disposal.
- *Work Planning:* Provided up-front characterization and disposition information during work planning.
- *Container Management:* Identified waste packaging and segregation in work planning.
- *Staging:* Designated a dedicated area in the storage complex.
- *Transportation:* Placed direct contracts with transporters and disposal facilities.
- *Data Management:* Created a centralized data-gathering system, including bar coding technology.
- *Training:* Provided formal training to waste generators.

These accomplishments are central to satisfactory completion of the WM re-engineering and strategic objectives.

2.3.1 Strategy/Long-Range Planning

The Waste Management Strategic Plan was developed and issued in January 1999. This plan addressed disposal paths for LLW and TRU wastes. The disposal strategy for each anticipated waste stream was divided into a near term (next one to three years) and a long term (three to eight years) strategy. Appendix B, "Waste Volumes by Waste Streams," shows waste categories and estimated quantities. The Plan described herein addresses only the short term strategy for each waste type.

The objectives listed in Section 1.3 were key drivers for developing the disposal options for WVDP radioactive wastes. They were also used to evaluate the different disposal alternatives, identify complexities associated with the waste disposal options, and outline the overall approach that will be used to achieve waste management success.

The Plan does not consider the HLW canisters stored in the HLW Interim Storage Facility, nor the spent fuel assemblies currently stored in shipping casks and loaded on rail cars in preparation for shipment. Also, industrial and sanitary waste streams are not considered because they are addressed in other documents. MLLW and hazardous waste are included as waste types for the purpose of identification; however, MLLW is managed in accordance with WVDP-299, "Site Treatment Plan," and hazardous waste is managed in accordance with standard

operations procedures (SOPs) that reflect regulatory requirements (SOP 300 Series). Therefore, these waste streams follow a number of well defined disposal paths and are not described in detail in this Plan.

2.3.2 Waste Management Milestones

WM met or exceeded the following milestones during FY2000:

- Perform activities including analysis, characterization, document preparation, packaging, etc., to ship LLW for disposal to assure continued adequacy of indoor on-site storage capacity. Ship to meet a goal of 30,000 cubic feet which represents 230% of the annual generation rate of LLW.
- Prepare and stage greater than 154% of historical annual generation of waste for shipment by rail.
- Prepare an overall program plan detailing all key activities required to prepare the WVDP for shipment of LLW from the WVDP via an on-site rail spur.
- Prepare and document an evaluation of alternative containerization options available to ship LLW for disposal by rail. This review should include a review of the usability of the containers on site, cost estimates for this project, procurement options, and radiological concerns.
- Establish the necessary procedures to support on-site rail shipment of LLW.

2.3.3 Waste Disposal Quantities

During calendar year 2000, WVDP shipped the following categories and associated quantities of waste off site:

- | | |
|---------------------------------------|--------------------------|
| • LLW (FY2000) | ⇒ 33,705 ft ³ |
| • Hazardous/Mixed Waste | ⇒ 16,426 lbs |
| • Industrial Waste | ⇒ 102,642 lbs |
| • Recyclable Waste | ⇒ 7,482 lbs |
| • Sewage Treatment Waste Water/Sludge | ⇒ 3.98M lbs |

2.4 **FY2001 Milestones**

This section lists the milestones established for FY2001 to continue the progress of the WVDP towards Project completion and site closure.

2.4.1 Low-Level Waste Milestones

The following LLW milestones have been established for FY2001:

- Ship greater than 300% up to 384.6% (50,000 cubic feet) of historical annual generation of LLW.

- A variety of containerization methods will be utilized when practical to maximize the efficiency of waste disposal.
- Additionally, WVNS shall demonstrate the first use of lift liners and gondola rail cars per the Containerization Alternatives for LLW by Rail.
- First Low-Level Waste (LLW) Shipment to the Nevada Test Site (NTS) for Disposal.
 - Perform all necessary activities including document preparation, assessment, certification, etc. in order to be prepared to ship low-level waste to the NTS for disposal.
 - Ship a minimum of 700 cubic feet of LLW for disposal at the NTS by September 30, 2001.

2.4.2 High-Level Waste Milestones

The following HLW milestones have been established for FY2001:

- Removal of Residual Transuranic Activity from HLW Tank 8D-2.
 - Install sluicer in M-7 riser of HLW Tank 8D-2 and initiate washing of internal tank surfaces.
 - Remove Mobilization Pump from M-4 riser of HLW Tank 8D-2, install sluicer and initiate washing internal tank surfaces.
 - Complete tank washing, analyze and document alpha transuranic activity removed during washing.
- Tanks 8D-1 and 8D-2 Radionuclide Inventory Quantification.
 - Complete pre-wash sampling of fixed waste in Tank 8D-2.
 - Complete Tank 8D-1 field characterization activities.
 - Complete additional Tank 8D-2 field characterization activities.
 - Complete update to Tank 8D-1 and 8D-2 inventory and document results.
- Waste Incidental to Reprocessing (WIR) Process
 - Develop and issue the formal process of making WIR determinations per DOE Order 435.1.
 - Complete WIR determinations and associated documentation for wastes or waste streams generated to date in the Waste Tank Farm.

- Complete WIR determinations and associated documentation for wastes or waste streams generated to date in the Vitrification Facility.
- Process Cesium Removed from HLW Tanks.
- Transfer greater than 80,000 - 100,000 Cs-137 curies from the HLW tanks to the CFMT.

2.5 Project Scope - Phase II

Phase II of the Project includes the disposal of LLW and TRU waste; temporary storage of HLW, LLW, and TRU waste, (if there is no path to disposal); HLW heel removal; transport of HLW canisters to a federal repository; decontamination and decommissioning (D&D) of equipment, tanks, hardware, and facilities used in conjunction with the HLW treatment process.

3.0 RADIOACTIVE WASTE MANAGEMENT

Operation of the WVDP requires the handling, treatment, and storage of LLW and TRU wastes. This Plan presents disposal path alternatives for each waste category. The development of disposal strategies for LLW and TRU wastes are based upon a set of alternatives. The alternatives are based on the definition, features, and characteristics of the waste type. These disposal alternatives are screened to a smaller set and then compared to a single set of criteria to identify a preferred disposal strategy. The comparison criteria are: a) rough order of magnitude (ROM) costs, b) probability of obtaining permits, c) risk of repackaging, d) ability to control success factors, e) technical maturity, f) availability to the WVDP, and g) strategic alignment.

3.1 Critical Activities

The strategy for disposal of each different waste type has a series of steps and activities necessary for success. This plan summarizes the near term steps for each waste type.

The following activities, which are a subset of the primary actions discussed later, are critical to the success of the overall waste disposal strategy for the Project. Also identified is the organization that has the primary responsibility to accomplish the activity. These critical activities for success are not in order of importance or priority.

- Maximize the shipment, in the near term, of acceptable WVDP LLW for disposal at Envirocare, in Utah, under the Ohio Consolidated Contract.
Organization: WVNS
- Obtain approval for disposal of WVDP LLW at a DOE disposal site.
Organization: DOE
- Resolve issues regarding definition of TRU waste for WVDP.

Organization: WVNS/DOE

- Complete optimization of on-site processes, procedures, and facilities to maximize efficiency for shipping wastes off-site.

Organization: WVNS

- Ensure that waste producing activities and projects include the requirements for and the costs of shipping and disposal.

Organization: WVNS

- Develop waste acceptance criteria for characterizing, packaging, and certifying WVDP wastes for shipping and disposal at various DOE disposal locations.

Organization: WVNS

- Complete the design and implementation of the Remote Handled Waste Facility (RHWF).

Organization: WVNS/DOE

- Obtain authorization for the WVDP to use the WIPP for disposal of WVDP TRU wastes.

Organization: DOE

3.2 Low-Level Waste

3.2.1 Overview and Background

Operation of the WVDP requires the handling, treatment, storage, and off-site transport for disposal of a variety of LLW streams. The waste streams are segregated based on treatment/disposal options. DOE Order 435.1 defines LLW as all radioactive waste not classified as HLW, TRU waste, by-product material or naturally occurring radioactive material. DOE Order 435.1 permits small volumes of transuranium material (<100 nCi/gm) to be managed as LLW. (See Section 3.3.1) Procedures WM-210, "Waste Stream Characterization" and WM-230, "Determining Radioactivity in A Waste Package," are used to document isotopic distributions, activity ranges, final waste form activity, and accurately quantify radionuclides in a waste stream or waste package. LLW is characterized as it is generated for the following:

- Physical and chemical characteristics.
- Volume, including the waste container.
- Weight, including the waste container.
- Package date.

3.2.2 Storage Facilities

The Lag Storage Facilities provide interim storage of WVDP LLW prior to final off-site disposal. They consist of the Lag Storage Building (LSB), Lag Storage Areas (LSA)-1, -3, and -4, the Interim Waste Storage Facility (IWSF), three hardstands (outdoor storage areas), and the rail packaging and staging area. The Lag Storage Facilities also include the Chemical Process Cell/Waste Storage Area (CPC/WSA). Various mixed wastes are also stored in these facilities. The LSB and LSA-3

and -4 are clear span structures with pre-engineered frames and steel sheathing over a concrete slab. LSA-1 is a clear span structure with a pre-engineered frame and a fabric enclosure over compacted stone.

A new Shipping Depot, attached to LSA-4, has been designed and built for staging and loading waste shipments. This depot also contains offices for the transportation personnel. The office area is constructed with concrete filled block and concrete ceiling panels to provide radiation shielding for the personnel occupying these spaces. This facility enhances the "Touch Waste Once" philosophy by allowing WM to bypass interim storage and placing the waste immediately into shipping containers.

3.2.3 Low-Level Waste Disposal Strategy

The NRC land disposal requirements (10 Code of Federal Regulations 61.55) define three classes of LLW: A, B, and C. Class B and C LLW have a higher concentration of radioisotopes (and more stringent disposal requirements as a result) than Class A. Volumes associated with LLW are estimated to be:

•	Stored	⇒	598,773 ft ³
•	Routine Annual Additions	⇒	13,000 ft ³
•	Future Generation	⇒	4,937,250 ft ³

The preferred LLW disposal strategy for the near term (1 to 3 years) is to pursue access to a western DOE disposal site (e.g., NTS, Hanford) due to the high cost or acceptance limitations of available commercial disposal facilities.

In July 2001, The WVDP obtained approval to ship to the NTS. Class A LLW can now be shipped to Envirocare and NTS. Waste streams will be disposed at either disposal facility based on life-cycle cost benefit.

3.3 **Transuranic Waste**

3.3.1 Overview and Background

The WVDP Act defines TRU waste as "material contaminated with elements which have an atomic number greater than 92, including neptunium, plutonium, americium, and curium, and which are in concentrations greater than 100 nCi/gm, or in such other concentrations as the NRC may prescribe to protect the public health and safety." In 1982, the NRC promulgated 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Wastes," and published a supporting Environmental Impact Statement (EIS), "Final Environmental Impact Statement on 10 CFR 61" which set the limit for TRU waste to 100 nCi/gm.

The NRC's EIS, however, did not consider the waste stream from spent fuel reprocessing in its impact analysis. As such, the NRC has not endorsed the applicability of 10 CFR 61 waste classification system to Project waste.¹

In 1986, as a result of litigation by the Coalition on West Valley Nuclear Waste and Radioactive Waste Campaign (Civil Suit No. 86-1052-C), an out-of-court agreement (Stipulation of Compromise Settlement) stipulated that DOE request a determination or prescription from the NRC to clarify the issues surrounding the TRU waste definition. The TRU waste definition will be addressed in conjunction with the NRC.

DOE Order 435.1 provides the definition of TRU waste as the definition used in the WIPP Land Withdrawal Act of 1992, as amended, which defines a TRU waste and limits disposal at WIPP to TRU waste resulting from atomic energy defense activities. Since WVDP TRU waste resulted from past reprocessing of spent fuels from both commercial and defense sources, TRU waste is not presently scheduled to be shipped to WIPP.

Only small amounts of contact-handled (CH) TRU waste are being generated at this time because no major in-plant decontamination efforts are in progress. A small amount of remote handled (RH) suspect TRU waste from the spent fuel pool water treatment system has been generated and is stored in two High Integrity Containers (HICs) in the north yard of the Fuel Receiving and Storage (FRS) Area. The generation of significant amounts of TRU waste may occur during future D&D activities, as well as from WIR determinations. TRU mixed wastes identified in the Site Treatment Plan include elemental lead and debris.

3.3.2 Storage Facilities

TRU waste is contained in Type A containers and stored primarily in the LSB, but is permitted to be stored in LSA-3 and LSA-4, until a disposal site is available and a waste certification plan can be implemented. TRU waste is also stored outside in HICs as previously mentioned.

3.3.3 TRU Waste Disposal Strategy

For the purpose of this Plan, only those wastes containing alpha emitting TRU radioisotopes, with half-lives greater than 20 years, in concentrations greater than 100 nCi/gm are considered TRU wastes. WVDP TRU wastes are principally associated with the fuel reprocessing operations including

¹

Letter, M. R. Knapp, Director of Low-Level Waste Management and Decommissioning, Nuclear regulatory Commission, to W. W. Bixby, dated August 18, 1987.

AEC/Hanford fuel throughput. At this time, WVDP waste is not considered to meet the definition of defense related waste; however, because of the origin of the spent nuclear fuels processed by Nuclear Fuel Services, Inc., WVNS is evaluating disposal options at WIPP. Waste volumes associated with this waste category are estimated to be:

- | | | | |
|---|--------------------------|---|---|
| • | Stored | ⇒ | 19,358 ft ³ |
| • | Routine Annual Additions | ⇒ | 150 ft ³ |
| • | Future Generation | ⇒ | 6150 ft ³ (after
processing of stored
volumes & closure
activities) |

The preferred TRU disposal strategy for the near term (1 to 3 years) is to passively store on-site, as prescribed by the Waste Management Programmatic EIS Record of Decision (ROD), until WVDP waste is accepted at WIPP. There is no disposal currently available for wastes in this category. To achieve the proposed implementation of this near term disposal strategy, the following activities are identified:

- Store passively on-site until WVDP waste is accepted for disposal at WIPP.
- Obtain internal agreement from DOE-OH/WVDP and DOE Headquarters on the scope and timing of approval request on WVDP's use of the WIPP.
- Develop a program and implementing procedures to comply with the WIPP WAC.
- Characterize and package wastes based on WIPP's WAC for shipment in TRUPACT IIs (CH TRU) or shielded casks (RH TRU) and disposal at WIPP.
- Minimize volume of waste in this category by aggressively characterizing and packaging wastes as LLW where possible.
- Implement the RHWF for managing WVDP TRU wastes with high contamination and radiation levels.

4.0 WASTE CERTIFICATION AND WASTE ACCEPTANCE PROGRAMS

4.1 Certification Program

The Project has implemented a waste certification program to allow newly generated radioactive waste to be effectively managed from the point of generation through disposal. This focus on life-cycle management methods assures all required information for storage, treatment, and disposal is gathered prior to, at, or as close as possible to the time of generation and prior to placement of the waste into a facility for storage awaiting final disposition.

The certification program includes methods to clearly define the current and anticipated Project LLW waste streams based on process knowledge or other applicable information. The intent is to develop a small number of site specific waste streams for use in waste characterization and certification. WVDP-339 "Waste Certification Program Plan," defines the analysis and waste certification requirements and methods consistent with DOE Order 435.1 and off-site DOE disposal facility WAC.

The certification program addresses appropriate practices for generating, handling, segregating, packaging, certifying, transporting, and disposing of LLW to the greatest extent practical. Site projects are planned with the anticipated waste streams identified in the project documentation. WVDP waste generators are responsible for proper identification, segregation, packaging, and verification that the waste is compliant for off-site acceptance. The WM Waste Certification Official (WCO) is responsible for ensuring that the final waste package meets the requirements of the off-site DOE disposal facility and certifies each package. Waste certification is controlled through adherence to WM-310, "Conducting Waste Certification Activities," WVDP-339 and site operating procedures. These documents delineate roles, responsibilities, and requirements for implementing the certification program, including the responsibility of WM representatives to assist waste generating organizations with waste packaging and characterization. Newly generated radioactive wastes with a clear path to disposal will be shipped for disposal within one year of receipt in a WM facility. Meeting this goal requires a partnership between the organization generating waste and WM.

Key elements of the certification program are as follows:

- Plan projects to include waste management aspects.
- Train and require generators and packaging personnel to be accountable for waste.
- Package wastes as certified waste streams.
- Control waste files and waste transfer paperwork to maintain traceability of the waste and associated documentation.
- Maintain level of confidence that waste is properly characterized to meet the requirements for off-site transportation and the disposal site WAC.
- Use barcoding technology for tracking waste on-site.
- Use integrated approach for waste generation and management.

4.2 Waste Acceptance Criteria

The WVDP WAC are based on WIPP, NTS, Envirocare, Idaho National Engineering and Environmental Laboratory (INEEL), and Hanford criteria. Compliance with receiving facility WAC for LLW is accomplished primarily through adherence to specific waste characterization, packaging and certification procedures. The Waste Disposition Programs

Manager, or designee, will certify by signature that the waste meets all applicable federal, state, DOE, and receiving facility requirements. Most WAC requirements can be placed in the following four categories:

- Waste characterization requirements.
- Waste packaging requirements.
- Prohibited items.
- Certifications, approvals, and documentation required prior to shipping waste.

A supplement to WVDP-339, "Nevada Test Site Waste Acceptance Criteria (NTSWAC), Revision 3 Implementation Crosswalk (NIC)," addresses WVNS compliance with specific WAC requirements for the NTS.

The requirements for characterizing and certifying TRU wastes is addressed in DOE/WIPP-069, "Waste Acceptance Criteria for the Waste Isolation Pilot Plant."

4.3 Radioactive Waste Management Basis

The WVDP operates under an Authorization Agreement and a site Authorization Basis. The Authorization Basis includes safety analysis reports, hazards analyses, facility hazards categorization, and safety evaluation reports from the DOE and NRC. Facility safety oversight is through DOE authority. The DOE has determined there is a basis for the site to operate safely, and there are both administrative and engineered controls in place to protect the public, workers, and environment.

The Authorization Basis allows WVNS to operate a nuclear facility and carry out the activities authorized in the Authorization Agreement. DOE Order 435.1 requires additional documentation for facilities that generate, treat, store, or dispose of radioactive wastes. Documentation required by the DOE Order is termed the Radioactive Waste Management Basis (RWMB), and the Order requirement states: "The objective of this requirement is to ensure that the hazards associated with radioactive waste management facilities, operations, and activities have been identified, their potential impacts analyzed, and appropriate controls documented, implemented, and maintained for the protection of workers, the public, and the environment."

Authorization Basis documents for the facility, operation or activity are prepared through implementation of the following governing documents. These documents also govern development of the RWMB.

- DOE 5480.21, "Unreviewed Safety Questions"
- DOE 5480.22, "Technical Safety Requirements"
- DOE 5480.23, "Nuclear Safety Analysis Reports"
- DOE-EM-5502-94, "Hazard Baseline Documentation"
- DOE-STD-1027-92, "Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23"

- DOE STD-3009-94, "Preparation Guide for US DOE Non-reactor Nuclear Safety Analysis Reports"

The WVDP Authorization Basis includes RWMB documentation for facilities, operations, and activities for HLW, TRU Waste, and LLW. MLLW and mixed TRU waste management documentation is also addressed in the RWMB. The RWMB documentation that is in addition to the Authorization Basis are the site WAC, the waste certification program plan, and site SOPs.

The WVDP has an approved Authorization Basis. The WVDP is operating under established controls and requirements to provide adequate protection from the hazards of radioactive waste management, and to provide compliance with DOE Order 435.1. The following documentation is incorporated into the WVDP RWMB:

- DW:2001:0145 Alice C. Williams to Robert R. Campbell, "Authorization Agreement Between the U.S. Department of Energy and West Valley Nuclear Services Co. (WVNS) for the West Valley Demonstration Project (WVDP), dated February 22, 2001
- WVDP-185 "Waste Form Compliance Plan for the West Valley Demonstration Project High Level Waste Form"
- WVDP-186 "Waste Form Qualification Report (WQR)"
- WVDP-310 "WVDP Safety Management System (SMS) Description"
- WVDP-339 "Radioactive Waste Certification Program Plan"
- WVDP-353 "Waste Management Procedures"
- WVDP-370 "WVDP Radioactive Waste Acceptance Criteria"

5.0 RELATED SUBJECTS

5.1 Environmental Monitoring

The WVDP has a comprehensive environmental monitoring program that monitors and assesses effluents from site facilities, as well as all environmental media surrounding the site. The plan is described in WVDP-098, "Environmental Monitoring Program Plan." The monitoring results are reported annually in the Site Environmental Report.

5.2 Quality Assurance

The Quality Assurance Rule, 10 CFR 830.120, and DOE Order 5700.6C, "Quality Assurance," provide the overall Quality Assurance (QA) Program policies and requirements for activities at the WVDP.

WVNS's integrated QA program is defined in WVDP-111, "Quality Assurance Program," WVDP-099, "Environmental Quality Assurance Plan," and WVDP-002, "Quality Management Manual - QMs." These documents establish the requirements for developing implementing policies and procedures for activities conducted at the WVDP by WVNS and its subcontractors.

5.3 Personnel Training

A formal Waste Management Operator training program designed to comply with DOE Order 5480.20A has been established at the WVDP. The existing program consists of an initial general Waste Management Qualification Standard, "Waste Management B," which requires approximately three months to complete. The training is followed by specific "A" operator training in one of two areas: 1) Waste Operations - Hazardous Waste Handling, and 2) Waste Operations - LAG Operations. Each of the specific qualification standards requires three to six months to complete and includes two to three months of on-the-job training. All training is defined in qualification standards and training procedures that prescribe requirements for testing, annual refresher courses, and recertification every two years. WM training is described in the Program Description and Continuing Training Plan, which is updated annually.

5.4 Decontamination and Decommissioning Programs

Decontamination and decommissioning activities have taken place at the WVDP throughout FY2001 and with plans in place for future D&D projects. Activities completed and planned are as follows:

FY2001

- O2 Building
- General Purpose Cell Crane
- Process Mechanical Cell
- Off Gas Aisle
- Product Packaging and Handling Area Glove Box
- Acid Recovery Pump Room
- Diesel and Condensate Tanks
- FRS Cooling Tower

FY2002

- Scrap Removal Room Debris
- FRS Canisters, Racks, and CUP Clear Well Bucket and Debris
- Process Mechanical Cell
- Extraction Cell 2

FY2003

- FRS drain/decontaminate Storage Pool/CUP, remove Decon Stall

5.5 Environmental Impact Statement Status

In 1996, the DOE and the New York State Energy Research and Development Authority prepared a draft environmental impact statement (DEIS) (DOE/EIS-0226-D) to evaluate the long term environmental impacts associated with completion of the Project and closure or long term management of the Western New York Nuclear Service Center. In late summer of 2000, DOE announced a new approach to reaching its goal for completion of the WVDP: separate the EIS decision-making process into two phases by revising (i.e., "re-scoping") the scope of DEIS (DOE/EIS-0226-D). Re-scoping allows for the original scope of the DEIS to now be analyzed in two separate EISs: 1) a WVDP Decontamination and Waste Management EIS and; 2) a West Valley Site Decommissioning or Long-Term Stewardship EIS. The concept of EIS re-scoping allows actions that are ready for decision-making to be separated from actions that would benefit from long-term, additional evaluation, i.e. site closure or long-term management.

Under the expedited EIS, OH/WVDP will turn its near-term focus on decontamination and waste management decisions. Waste will be shipped off-site for disposal, and the Main Process Building, the Vitrification Facility and the Tank farm will be decontaminated. The decontamination activities will reduce the hazard associated with WVDP facilities and place facilities in a safe condition until they can be decommissioned. The long term site closure and management decisions will become the subject of a new EIS.

5.6 WVDP Waste Minimization/Pollution Prevention Awareness Program

WVDP-087, "Waste Minimization/Pollution Prevention Awareness Plan," documents the development and implementation of the Waste Minimization/Pollution Prevention (WMin/PP) Awareness Program. The plan establishes the strategic framework for integrating WMin/PP into all waste generation activities and includes aggressive waste reduction goals and methods for measuring progress.

The WVDP is currently represented on a number of inter-agency and commercial, technical working groups and committees to discuss and interchange issues of concern on WMin/PP practices and programs. The scope includes radioactive, mixed, and hazardous wastes as well as other appropriate, non-regulated wastes. In addition, broad technical issues such as state of the art technologies, lessons learned, substitution chemicals, research and development needs, and cost effective process changes are also addressed.

6.0 LIST of APPENDICES

6.1 Appendix A, Waste Volumes by Waste Streams

APPENDIX A
Waste Volumes by Waste Streams

GENERAL WASTE CATEGORIES

WASTE DESCRIPTION	LLW (ft ³)	TRU (ft ³)
Miscellaneous Debris	143,266	
Resin/Sludge	31,673	
Concrete	37,887	
Metals	63,523	
Soil	120,407	
Drum Cell Storage	182,659	
CPC/WSA and LAG Storage		19,358 ⁽¹⁾
Site Closure (Future Generation)	4,937,250 ⁽²⁾	6,150

(Source: Integrated Planning, Accounting, and Budgeting System [IPABS] at the end of FY2000)

⁽¹⁾ TRU waste stored in CPC/WSA and LAG can be further categorized as:

Remote Handled Oversized Metals	⇒	9,554 ft ³
Remote Handled Debris	⇒	7,079 ft ³
Contact Handled Debris	⇒	2,725 ft ³

PROJECT SPECIFIC and ROUTINE GENERATION WASTE VOLUMES for FY2001⁽²⁾

PROJECT	LLW (ft ³)
Spent Fuel Shipping (not the fuel)	419
Vit Expended Material	93
D&D of VARIOUS FACILITIES	
O2 Building	270
FRS Cooling Tower	850
GCR Extension, Enclosure, Hatch Covers	101
GPC Crane	702
PMC Cranes	1,088
Off Gas Aisle, WMOA	370
PPH Glove Box	148
ARPR	1,300
Routine Generation	13,442

(Source: WVDP Quarterly Waste Capacity Report, Third Quarter, FY2001, dated 7/31/01)

⁽²⁾ These volumes include the 1st, 2nd, and 3rd fiscal quarters and are in addition to the Table of General Waste Categories above.

WVNS RECORD OF REVISION

Rev. No.	Description of Changes	Revision On	
		Page(s)	Dated
19	General Revision to reflect annual update showing FY2000 accomplishments, current state of waste management, and projections for FY2001. No departments are affected by this change.	All	10/03/01