DOE/RL-95-103
Revision 4

Hanford Site Guide for Preparing and Maintaining Generator Group Pollution Prevention Program Documentation

United States
Department of Energy
Richland, Washington

Approved for Public Release

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APPROVED FOR PUBLIC RELEASE

Christine Willingham — 11/23/99

C. Willingham — Date

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ABSTRACT

This document provides guidance to generator groups for preparing and maintaining documentation of Pollution Prevention/Waste Minimization (P2/WMin) Program activities. The guidance is one of a hierarchical series that includes the *Hanford Site Waste Minimization and Pollution Prevention Awareness Program Plan* (DOE-RL, 1998a) and Prime Contractor implementation plans describing programs required by *Resource Conservation and Recovery Act of 1976* (RCRA) 3002(b) and 3005(h) (RCRA and EPA, 1994). Documentation guidance for the following five P2/WMin elements are discussed:

- Fiscal Year (FY) Goals
- Budget and Staffing
- Waste Minimization (WMin) Assessments (WMAs)
- Pollution Prevention (P2) Reporting
- WMin Certification

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GLOSSARY

ABBREVIATIONS AND ACRONYMS

BHI	Bechtel Hanford, Inc.
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOE-HQ	U.S. Department of Energy, Headquarters
DOE-RL	U.S. Department of Energy, Richland Operations Office
EPA	U.S. Environmental Protection Agency
EPCRA	*Emergency Planning and Community Right-To-Know Act of 1986*
FDH	Fluor Daniel Hanford, Inc.
FR	Federal Register
FTE	Full Time Equivalent
FY	Fiscal Year
HLW	High-Level Waste
LEFF	Process Waste Water
LLW	Low-Level Waste
LMHC	Lockheed Martin Hanford Co.
MLLW	Mixed Low-Level Waste
MTRU	Mixed Transuranic Waste
OHAZ	State Regulated Waste
P2	Pollution Prevention
P2OA	Pollution Prevention Opportunity Assessment
P2/WMin	Pollution Prevention/Waste Minimization
P2/WMin Group	Fluor Daniel Hanford, Inc. Waste Management Project P2/WMin Group
PCB	Polychlorinated biphenyl
PNNL	Pacific Northwest National Laboratory
POC	Point of Contact
PPA	Price, Performance, or Availability
PPOA	Pollution Prevention Opportunity Assessment
RCRA	*Resource Conservation and Recovery Act of 1976*
RHAZ	RCRA Hazardous Waste
RL	U.S. Department of Energy, Richland Operations Office
SAN	Solid Sanitary Waste
SpG	Specific Gravity
SWITS	Solid Waste Information Tracking System
TRU	Transuranic Waste
TSCA	*Toxic Substances Control Act of 1976* and TSCA-regulated waste (Polychlorinated Biphenyls (PCBs), etc.)
URL	Uniform Resource Locator
USC	United States Code
WAC	Washington Administrative Code
WMin	Waste Minimization

ABBREVIATIONS AND ACRONYMS (Continued)

WMA	Waste Minimization Assessment
WMH	Waste Management Federal Services of Hanford, Inc.
WW-LLW	Low-Level Waste, waste water
WW-MLLW	Mixed Low-Level Waste, waste water
WW-TRU	Transuranic Waste, waste water
WW-HLW	High-Level Waste, waste water
WW-HAZ	RCRA- or State-Regulated Hazardous Waste, waste water
WW-SAN	Sanitary Waste, waste water
WW-MTSCA	TSCA Regulated Waste (PCB's, etc.), waste water

DEFINITIONS

Affirmative Procurement. A Program that ensures that items composed of recovered materials will be purchased to the maximum extent practicable, consistent with Federal law and procurement regulations (RCRA, Section 6002 and 40 CFR 247). Guidance on this program has been issued and is updated as the U. S. Environmental Protection Agency issues additional guidelines.

Cleanup/Stabilization Waste. Cleanup/stabilization includes environmental restoration of contaminated media (soil, groundwater, surface water, sediments, etc.), stabilization of nuclear and non-nuclear (chemical) materials, and deactivation and decommissioning (including decontamination) of facilities.

Cleanup/stabilization waste consists of one-time operations waste produced from environmental restoration activities, including primary and secondary wastes associated with retrieval and remediation operations, "legacy wastes," and wastes from decontamination and decommissioning/transition operations. It also includes all *Toxic Substances Control Act of 1976* regulated wastes, such as PCB-contaminated fluids or equipment.

Cleanup/stabilization activities that generate wastes do not necessarily occur at a single point in time, but may last for several years while producing wastes. By definition, these activities are not considered to be routine (periodic and/or on-going), because *the waste is a direct result of past operations and activities,* rather than a current process. Newly generated wastes that are produced during these "one-time operations" are considered a secondary waste stream, and are separately accounted for whenever possible. This secondary (newly generated) waste usually results from common activities such as handling, sampling, treatment, repackaging, shipping, etc.

Generator. Each contractor within the scope of the P2/WMin Program whose activities or processes produce waste.

Generator Group. As defined by the responsible contractor, any discrete activity, project, or facility whose act or process produces waste.

Goal. A specific result toward which efforts are directed.

Hazardous Substance. Any hazardous substance listed as a hazardous substance in the *Emergency Planning and Community Right-to-Know Act of 1986* and any further updates, and all ozone depleting compounds as defined by the *Montreal Protocol of October 1987* and any further updates of the protocol.

Hazardous Waste. Those solid wastes that exhibit any of the characteristics of hazardous waste identified in 40 CFR 261, Subpart C (i.e., ignitable, corrosive, reactive, or toxic), or that are listed in 40 CFR 261, Subpart D, "List of Hazardous Waste."

Low-Level Waste. Waste that contains radioactivity and is not classified as high-level waste, transuranic waste, or spent nuclear fuel, or by-product material as defined by DOE Order 5820.2A (DOE, 1988). Test specimens of fissionable material that are irradiated for research and development only, and not for the production of power or plutonium, may be classified as Low-Level Waste, provided the concentration of transuranic is less than 100 nanocuries per gram (nCi/g).

Mixed Low-Level Waste. Low-Level Waste containing hazardous components as defined by the RCRA (also low-level mixed waste).

Mixed Waste. Waste containing both radioactive and hazardous components as defined by the *Atomic Energy Act of 1954* and RCRA, respectively.

Non-Routine Waste. Identical to waste from cleanup/stabilization activities.

Pollutant. A substance whose dispersion into the environment has a deleterious effect on the ecosystem.

Pollution Prevention. The use of materials, processes, and practices that reduce or eliminate the generation and release of pollutants, contaminants, hazardous substances, and waste into land, water, and air. For the U. S. Department of Energy, this includes recycling activities.

Pollution Prevention Opportunity Assessment. Evaluation and appraisal of a process, activity, or operation as a way to identify potential WMin opportunities.

Process Waste Water. Any water produced during manufacturing or processing operations that comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product. This determination is independent of the level and/or nature of the contaminants. Additionally, process waste waters are liquid wastes, which are directly piped to a permitted (on-site) waste treatment facility where treatment may consist of neutralization, evaporation, or placement in a settling or percolation pond, etc. This term does not include the liquid discharges to publicly owned treatment works, which are governed by U.S. Environmental Protection Agency- or state-issued national pollutant discharge elimination system permits, or local pretreatment standards.

RCRA-Regulated Waste. Solid waste, not specifically excluded from regulations under 40 CFR 261.4, "Identification and Listing of Hazardous Waste," or delisted by petition, that is either a listed hazardous waste (40 CFR 261.30 to 261.33) or exhibits the characteristics of a hazardous waste (40 CFR 261.20 to 261.24).

Recycling. Recycling techniques are characterized as use, reuse, and reclamation techniques (resource recovery). **Use** or **reuse** involves the return of a potential waste material either to the originating process as a substitute for an input material or to another process as an input material. **Reclamation** is the processing or regeneration of a material to recover a useable product.

Routine Operations Waste. Normal operations waste produced from any type of production, analytical, and/or research and development laboratory operations; treatment, storage, or disposal operations; "work-for-others;" or any periodic and recurring work that is considered ongoing. The term "normal operations" refers to the type of ongoing process (e.g., production) not the specific activity that produced the waste. Periodic laboratory or facility clean-outs and spill cleanups that occur as a result of these processes are also considered normal operations.

Sanitary Waste. All non-hazardous and non-radioactive waste disposed in a sanitary landfill including demolition waste, industrial wastes, and wastes such as garbage generated by normal housekeeping activities.

Segregation. The practice of separating or isolating contaminated materials from non-contaminated materials, or the separation/isolation of one waste type from another in an attempt to minimize the amount of the more noxious (and costly) material for disposal.

Source Reduction. The elimination or reduction of waste generation at the source. Source reduction activities and techniques include substitution of less hazardous materials, process optimization or modification, technology changes and administrative changes (inventory control), and housekeeping practices (material segregation). Source reduction results in reducing or eliminating potential waste material exiting from a process.

State-Only Dangerous Waste. Any other hazardous waste not specifically regulated under TSCA or RCRA, such as used oil, that may be regulated by Washington State Department of Ecology under WAC 173-303.

Transuranic Waste. Without regard to source or form, waste that is contaminated with alpha-emitting transuranium radionuclides with half-lives greater than 20 years and concentrations greater than 100 nCi/g at the time of assay. Heads of Field Elements can determine that other alpha contaminated wastes, peculiar to a specific site, must be managed as transuranic waste (DOE, 1988).

Treatment. Any method, technique, or process (including neutralization) designed to change the physical, chemical, or biological character or composition of any hazardous,

radioactive, or sanitary waste so as to neutralize such waste, to recover energy or material resources from the waste, or to render such waste non-hazardous; safer to transport, store, or dispose; or amenable for recovery or storage; or reduced in volume.

TSCA-Regulated Waste. Wastes, both liquid and solid, containing more than 50 parts per million (ppm) of PCBs or PCBs regulated for disposal (DOE, 1996).

Waste Minimization. Elimination or minimization of the generation of waste before treatment, storage, or disposal. Waste minimization is any source reduction or recycling activity that results in (1) reduction of total volume of waste, (2) reduction of toxicity of waste, or (3) both, as long as that reduction is consistent with the general goal of minimizing present and future threats to human health and the environment.

Waste Minimization Assessment. An evaluation and appraisal of a process, activity, or operation to identify potential waste minimization opportunities. Waste minimization assessments include pollution prevention opportunity assessments, value engineering studies, and engineering studies.

Waste Reduction. Reduction of the total amount of waste that is generated and disposed of by DOE operations through WMin and treatment activities.

1.0 INTRODUCTION

1.1 PURPOSE OF GUIDE

This document provides guidance to contractor generator groups for developing and maintaining documentation of P2/WMin Program activities. The program documentation is intended to demonstrate generator compliance with U. S. Department of Energy (DOE) requirements as well as state and Federal regulations. The guidance is one of a hierarchical series that includes the *Hanford Site Waste Minimization and Pollution Prevention Awareness Program Plan* (DOE-RL, 1998a) and Prime Contractor implementation plans describing programs required by RCRA 3002(b) and 3005(h) (RCRA and EPA, 1994).

1.2 BACKGROUND

The purpose of the Hanford Site P2/WMin Program is to eliminate or reduce waste generation and pollutant releases to the environment, use of toxic substances, and to conserve resources. The P2/WMin Program has been developed to meet P2/WMin public law requirements, Federal and state regulations, and DOE requirements (DOE-RL, 1998a). The Hanford Site P2/WMin Program is implemented through sitewide and contractor programs. The *Hanford Site Waste Minimization and Pollution Prevention Awareness Plan* (DOE-RL, 1998a) provides overall requirements. Each Prime Contractor [Fluor Daniel Hanford, Inc. (FDH), Bechtel Hanford, Inc. (BHI), Lockheed Martin Hanford Co. (LMHC), and Pacific Northwest National Laboratory (PNNL)] is required to have an implementation plan describing how the requirements will be met (DOE-RL, 1998a). The documentation guide identifies the documentation required to be maintained on file that demonstrates compliance with the requirements.

The U. S. Environmental Protection Agency (EPA) provides guidance for a RCRA-compliant WMin program (EPA, 1993). The DOE also outlines the elements of a generator-specific P2 program (DOE, 1996). The EPA and DOE program elements are presented in Appendix A and are applicable at the Hanford Site, Prime Contractor, and generator group level.

Generator groups are required to maintain documentation on file only for the key P2 elements listed in Table 1-1. Documentation of these key elements will demonstrate compliance with regulatory, Federal, and Hanford Site requirements.

Table 1-1 **Key Program Elements for Generator Group Pollution Prevention Program Documentation.**
FY Goals
Budget and Staffing – Budget and Full Time Equivalent (FTE) staff supporting P2/WMin activities.
WMAs
P2 Reporting – Quarterly reports
WMin Certification

2.0 REQUIRED POLLUTION PREVENTION/WASTE MINIMIZATION PROGRAM DOCUMENTATION

This section discusses documentation for the P2/WMin elements that is to be kept on file.

2.1 FISCAL YEAR GOALS

Establishing goals is essential to a successful P2/WMin Program and is an important and required element of the Hanford Site P2/WMin Program. P2 goals are necessary to (1) meet Federal, state, and DOE regulations and reporting requirements; (2) provide a system for tracking progress and measuring success of P2/WMin activities; and (3) focus efforts on results-oriented, achievable activities that reduce the generation of waste and pollutants to all media, reduce the use of hazardous substances, and increase the conservation of energy and natural resources. Two sets of goals have been identified for FY 2000. The previously established Secretarial of Energy goals are to be accomplished by December 31, 1999, and the FY 2000 goals are to be accomplished by the end of FY 2000.

In establishing waste reduction goals for wastes generated from routine operations, generators or generator groups should consider waste generation goals assigned to their company to support meeting the FY 2000 or Secretary of Energy's goals. Qualitative goals may be established. Generators and generator groups shall report progress toward attaining goals in their quarterly status reports.

Additional discussion on goals can be found in the *Hanford Site Waste Minimization and Pollution Prevention Awareness Program Plan* (DOE-RL, 1998a) and Prime Contractor implementation plans.

2.1.1 Secretary of Energy Goals

The DOE has established waste reduction goals for waste generated from routine operations for the DOE complex to be achieved by December 31, 1999. The May 1996 memorandum from The Secretary of Energy announcing the goals is presented in Appendix B. Calendar Year 1993 waste generation data is the baseline year for these waste reduction goals. U.S. Department of Energy-Richland Operations Office (RL) has accepted these goals for the Hanford Site. These goals are applicable to the routine and cleanup/stabilization waste generators as noted. The goals are itemized below.

- **For Routine Operations:**
  - Reduce the generation of Low-Level Waste (LLW) 50-percent
  - Reduce the generation of Mixed Low-Level Waste (MLLW) 50-percent

- Reduce the generation of hazardous waste, including RCRA- and State-regulated wastes, 50-percent

- Reduce the generation of sanitary waste 33-percent

- Reduce total releases and off-site transfers for treatment and disposal of *Emergency Planning and Community Right-to-Know Act* (EPCRA) 313 toxic chemicals 50-percent.

- **For Routine Operations and Cleanup/Stabilization Activities:**

  - Recycle 33-percent of sanitary waste.

- **Affirmative Procurement:**

  - Maintain affirmative procurement of EPA-designated, recycled content products listed in Table C1-1 of Appendix C at 100-percent, except where they are not obtainable at a reasonable price, do not meet performance standards, or are not available in a reasonable time. That is failure to meet price, performance or availability (PPA) standards. The list of EPA-designated products may also be found on the Affirmative Procurement page at http:// apsql05.rl.gov/polprev/ap/ap.htm. The list of EPA-designated products changes periodically. When procuring products, generators should check the above Uniform Resource Locator (URL) for the most current list of EPA-designated products.

2.1.2 FY 2000 Goals

Generators or generator groups will establish FY 2000 waste reduction goals. FY 2000 waste reduction goals are to be submitted by October 15th. FY 2000 goals are to be approved and signed by generator or generator group management, submitted to the FDH Waste Management Project P2/WMin Group (P2/WMin Group), and filed with the generator's or generator group's program documentation. A suggested format for the documentation of established goals is provided in Table 2-1. The FY 2000 pollution prevention goals for Hanford Site contractors, FDH, PNNL, BHI, and LMHC are presented below.

- For Routine Operations: Reduce waste from routine operations by 5% by the end of FY 2000 using a FY 1999 baseline for hazardous waste, LLW, and MLLW.

- For Routine Operations and Cleanup/Stabilization Activities: Divert 33% of sanitary waste generated from landfills.

- Affirmative Procurement: Increase purchases of EPA-designated recycled content products to 100% in FY 2000, except where they are not commercially available competitively at a reasonable price or do not meet performance standards. The list of

EPA-designated products may also be found on the Affirmative Procurement page at http:// apsql05.rl.gov/polprev/ap/ap.htm. The list of EPA-designated products changes periodically. When procuring products, generators should check the above URL for the most current list of EPA-designated products.

Table 2-1. Instructions for Preparing Fiscal Year Pollution Prevention/Waste Minimization Goals

1. List on the table below the waste generation forecast or other basis for the waste type listed.

2. Enter the estimated quantity resulting from source reduction and recycling as a percentage of the forecasted quantity.

Fiscal Year Goals For FY ____.

____Routine Waste ____ Cleanup/Stabilization or Non-Routine Waste

Waste classification	Waste forecast or Other Basis of Estimate	Source reduction (Percent)	Recycling (Percent)	Treatment (Percent)
Low-level waste (LLW)	(m3)			
Transuranic waste (TRU)	(m3)			
Mixed Low-level waste (MLLW)	(m3)			
Mixed Transuranic waste (MTRU)	(m3)			
RCRA Hazardous waste	(mt)			
State-only Dangerous waste	(mt)			
Toxic Substances Control Act of 1976 (TSCA)-regulated waste	(mt)			

Approved: _____
Generator or Generator Group Management

2.2 POLLUTION PREVENTION BUDGET DOCUMENTATION REQUIREMENTS

Hanford Site contractors are required to develop budgets for activities that will help contractor generator groups achieve their goals and maintain the DOE and EPA P2 program elements presented in Appendix A. The DOE P2 program elements listed in Appendix A are to be considered in a P2 program for an individual facility. Separate, identifiable funding shall be established within individual cost account plans depending on contractor funding needs.

Copies of the appropriate budget documentation will be maintained as program documentation. In cases where funding is not established in separate budget documents, estimated budget information should be maintained as documentation. The quarterly status report, discussed in Section 2.4, also provides documentation of planned and actual budget as well as the P2 staffing level in FTEs.

2.3 WASTE MINIMIZATION ASSESSMENTS

An important part of an effective P2/WMin Program is the identification of waste streams as well as the activities that produce those wastes. Once those waste streams have been characterized (constituents, concentrations, quantities), they can be prioritized and evaluated for reduction. In evaluating a given waste stream for reduction it is desirable that alternative reduction methods be considered and economically evaluated. Evaluating alternative waste reduction methods in order to identify waste reduction opportunities should be the primary purpose of a WMA. The preferred assessment method at the Hanford Site is conducting a Pollution Prevention Opportunity Assessment (P2OA). Other evaluation methods, such as value engineering studies, engineering evaluations, and P2/WMin in design assessments, are also acceptable.

The P2OA is a structured assessment process that utilizes a systematic approach to identify and document WMin opportunities. Training on conducting P2OAs is available from the P2/WMin Group. The *Pollution Prevention Opportunity Assessments -- A Training and Resource Guide*, (DOE-RL, 1998b) is also available to help waste generator groups complete these activities.

WMAs must also be documented. Documentation should be maintained in the program documentation file. The results of WMAs should be placed on the Hanford P2 Home Page at http://apsql05.rl.gov/polprev/default.asp. To place a WMA on the Hanford P2 Home Page, waste generator groups should submit the completed WMA along with an assessment summary in electronic format to their P2/WMin Group point of contact (POC).

2.4 POLLUTION PREVENTION/WASTE MINIMIZATION REPORTING

This section discusses the P2/WMin reporting requirements. Reports should be submitted electronically using formats available at http://apsql05.rl.gov/polprev/areport/report.htm. Alternatively, if access to the Hanford intranet is unavailable, data may be submitted on hard copy to the P2/WMin Group POC using the forms provided in Appendix D.

A Quarterly Report shall be submitted by all Hanford Site waste generator groups on January 15th, April 15th, July 15th, and October 15th. The Quarterly Report is divided into two electronic forms: 1) Waste Reduction Accomplishments and 2) Status. Both forms are accessible via the Hanford P2 Home Page at http://apsql05.rl.gov/polprev/areport/report.htm. The P2/WMin Group is available to answer questions or provide further clarification on completing the Quarterly Reports.

2.5 WASTE MINIMIZATION CERTIFICATION

All generator groups shall certify annually that a WMin program is in place as required by RCRA 3002(b) and 3005(h) (RCRA), the Hanford Site Dangerous Waste Permit (EPA, 1994) and 40 Code of Federal Regulations (CFR) 264.73. A WMin certification form is shown in Appendix E and is also available on the Hanford P2 Home Page at http://apsql05.rl.gov/polprev/areport/cert.htm. The form should be completed and signed by facility management and maintained on file in the facility's operating record.

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3.0 REFERENCES

40 CFR 247, "Comprehensive Procurement Guideline for Products Containing Recovered Materials," *Code of Federal Regulations*, as amended.

40 CFR 261, "Identification and Listing of Hazardous Waste," *Code of Federal Regulations*, as amended.

40 CFR 264.73, "Operating Record," *Code of Federal Regulations*, as amended.

Atomic Energy Act of 1954, 42 USC 2011, et seq.

DOE, 1988, *Radioactive Waste Management*, DOE Order 5820.2A, U.S. Department of Energy, Washington, D.C.

DOE, 1996, *Pollution Prevention Program Plan*, U.S. Department of Energy, DOE/S-0118, Washington, D.C.

DOE-RL, 1998a, *Hanford Site Waste Minimization and Pollution Prevention Awareness Program Plan*, DOE/RL-91-31, Revision 4, U. S. Department of Energy, Richland Operations Office, Richland, Washington, September 1998.

DOE-RL, 1998b, *Pollution Prevention Opportunity Assessments--A Training and Resource Guide*, DOE/RL-96-80, Revision 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington, November 1998.

EPA, 1993, "Guidance to Hazardous Waste Generators on the Elements of a Waste Minimization Program," *Federal Register*, Vol. 58, No. 102, Washington, D.C.

EPA, 1994, *Hanford Facility Dangerous Waste Permit*, Permit Number WA7890008967, Hazardous and Solid Waste Amendments Portion, U. S. Environmental Protection Agency, Seattle, Washington.

EPCRA, *Emergency Planning and Community Right-to-Know Act,* as amended, 42 USC 11013, 11028, et seq.

RCRA, *Resource Conservation and Recovery Act of 1976*, 42 USC 6901, et seq.

TSCA, *Toxic Substances Control Act of 1976*, 15 USC 2601, et seq.

WAC 173-303, *Dangerous Waste Regulations*, Publication No. 92-91, Amended November 1995, Washington State Department of Ecology, Olympia, Washington.

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APPENDIX A

POLLUTION PREVENTION PROGRAM ELEMENTS

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POLLUTION PREVENTION PROGRAM ELEMENTS

A1.1 Generator Group Program Implementation Elements

P2 program implementation elements recommended by the DOE are given below (DOE, 1996). Table A1-1 lists P2 program elements recommended by EPA (EPA, 1993). A descriptive reference that discusses each element is also indicated in Table A1-1.

1. Organization and Infrastructure

   - Designate a generator group P2 coordinator,
   - Interface with the sitewide P2 coordinator(s),
   - Participate in the sitewide P2 Network,
   - Institute corrective actions resulting from program evaluation.

2. Program Development

   - Develop and maintain generator group P2 program documentation,
   - Establish goals,
   - Develop activity schedules for specific tasks and projects,
   - Obtain budgets for generator group programmatic activities,
   - Assign personnel to develop and implement the generator group P2 program,
   - Integrate P2 practices into operating procedures.

3. Sitewide Program Participation

   - Involve employees in job-specific P2 practices,
   - Exchange information and technologies with other waste generator groups,
   - Seek technical assistance,
   - Track material use,
   - Report on material usage, recycling, and progress made in implementing P2 practices,

- Participate in sitewide waste reduction and recycling programs.

4. Training

   - Identify job-specific P2 training needs,
   - Participate in P2OA and high Return on Investment training.

5. P2 Opportunity Assessments/Implementation

   - Identify and evaluate current and potential waste-generating activities,
   - Identify and prioritize P2 opportunities,
   - Conduct P2OAs on waste streams,
   - Implement process modifications and material substitutions,
   - Evaluate the potential of new technologies on waste-generating activities.

6. Use affirmative procurement practices

   - Encourage affirmative procurement in the purchase of EPA-designated recycled content products.

7. Design Considerations

   - Design P2 principles and practices into new and modified facilities,
   - Incorporate P2 into facility upgrades and process modifications and document these upgrades for projects in the conceptual design review/report phase of a project valued at a general plant project or higher.

8. Program Evaluation

   - Evaluate generator group program implementation status,
   - Evaluate waste reduction/performance.

Table A1-1. U.S. ENVIRONMENTAL PROTECTION AGENCY WASTE MINIMIZATION PROGRAM ELEMENTS GUIDANCE COMPLIANCE MATRIX

EPA guidance[1] WMin Program elements (per RCRA)[2]		Program Element Descriptive Reference
A.	Top management support	
	Hanford Site policy	Hanford Site plan
	Company policy	Contractor plan
	Set goals	Hanford Site plan and contractor plan
	Commitment opportunity implementation	Hanford Site plan and contractor plan
	Facility coordinator	Contractor plan
	Publicize successes	Hanford Site plan and contractor plan
	Incentives	Hanford Site plan and contractor plan
	Training	Hanford Site plan and contractor plan
B.	Characterization of waste generation and waste management costs	Hanford Site plan and contractor plan
C.	WMAs	
	Identification of opportunities	Hanford Site plan and contractor plan
	Determine true costs of the waste	Contractor plan
D.	Cost allocation system	Hanford Site plan and contractor plan
E.	Technology transfer	Hanford Site plan and contractor plan
F.	Program implementation and evaluation	Hanford Site plan and contractor plan

1 (EPA, 1993)
2 (RCRA, 1976)

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APPENDIX B

SECRETARIAL MEMORANDUM:

DEPARTMENT POLLUTION PREVENTION GOALS

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The Secretary of Energy
Washington, DC 20585

May 3, 1996

MEMORANDUM FOR HEADS OF DEPARTMENTAL ELEMENTS

FROM: HAZEL R. O'LEARY

SUBJECT: Departmental Pollution Prevention Goals

The Department of Energy pollution prevention strategy is to reduce the generation of all waste streams and thus minimize the impact of departmental operations on the environment. Preventing pollution also reduces risks to the health and safety of workers and the general public and saves scarce budget dollars. To demonstrate the Department's commitment to pollution prevention, we have set the following goals to be achieved by December 31, 1999, using calendar year 1993 as a baseline year.

For Routine Operations:

- Reduce by 50 percent the generation of radioactive waste.
- Reduce by 50 percent the generation of low-level mixed waste.
- Reduce by 50 percent the generation of hazardous waste.
- Reduce by 33 percent the generation of sanitary waste.
- Reduce by 50 percent total releases and off-site transfers for treatment and disposal of toxic chemicals.

For All Operations, Including Cleanup/Stabilization Activities:

- Recycle 33 percent of sanitary waste.

For Affirmative Procurement:

- Increase procurement of Environmental Protection Agency-designated, recycled products to 100 percent, except where they are not commercially available competitively at a reasonable price or do not meet performance standards.

Operations Offices will direct sites under their purview to set site-specific goals to assist in achieving the departmental goals. Progress toward meeting the departmental goals will be reported annually to me. It is the responsibility of each Federal and contractor manager to work diligently to meet these goals; to aggressively seek ways to reduce the amount of pollutants generated within the workplace; and to conserve, reuse, and recycle resources.

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APPENDIX C

EPA-DESIGNATED AFFIRMATIVE PROCUREMENT PRODUCTS LIST

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APPENDIX C

EPA-DESIGNATED AFFIRMATIVE PROCUREMENT PRODUCTS LIST

Table C1-1 is a list of EPA-designated products considered for affirmative procurement. The list of EPA-designated products may also be found on the Affirmative Procurement page at http:// apsql05.rl.gov/polprev/ap/ap.htm.

Table C1-1. EPA-DESIGNATED AFFIRMATIVE PROCUREMENT PRODUCTS LIST

Category	Designated Items
Construction Products	• Building insulation products • Carpet • Cement and concrete containing coal fly ash • Cement and concrete containing ground granulated blast furnace slag • Consolidated and reprocessed latex paint • Floor tiles • Laminated paperboard • Patio blocks • Shower and restroom dividers/partitions • Structural fiberboard
Landscaping Products	• Garden and soaker hoses • Hydraulic mulch • Lawn and garden edging • Yard trimmings compost
Non-Paper Office Products	• Binders (paper, plastic covered) • Office recycling containers • Office waste receptacles • Plastic desktop accessories • Plastic envelopes • Plastic trash bags • Printer ribbons • Toner cartridges
Paper and Paper Products	• Commercial/industrial sanitary tissue products • Miscellaneous papers (Bristols) • Newsprint • Paperboard and packaging products • Uncoated printing and writing papers • Coated printing and writing papers
Park and Recreation Products	• Plastic fencing • Playground surfaces • Running tracks

Table C1-1 (Continued). EPA Designated Affirmative Procurement Products List

Category	Designated Items
Transportation Products (continued)	• Channelizers • Delineators • Flexible Delineators • Parking stops • Traffic barricades • Traffic cones
Vehicular Products	• Engine coolants • Re-refined lubricating oils • Retread tires
Miscellaneous Products	• Pallets

References: *Comprehensive Guideline for Procurement of Products Containing Recovered Materials* (60 FR 21370, May 1, 1995), *Recovered Materials Advisory Notice* (60 FR 21386, May 1, 1995), and *Paper Products Recovered Materials Advisory Notice* (60 FR 26986, May 29, 1996)

APPENDIX D

QUARTERLY REPORT FORMS AND GUIDANCE

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D1.1 QUARTERLY REPORT FORMS AND GUIDANCE

P2 quarterly report forms are included in this appendix. Guidance on report input is included in Sections D1.1.1 and D1.1.2 below. Forms are available for completion and submittal on the Hanford P2 Home Page at http://apsql05.rl.gov/polprev/default.asp.

Copies of these reports should be maintained on file in the generator group program documentation.

Add an Entry to the Database

Facility: 200 ETF/242-A Evaporator

Click on the ? [Help] icon for help.

Fiscal Year: [ ]

Quarter: (•) 1st ( ) 2nd ( ) 3rd ( ) 4th

? Facility Name: 200 ETF/242-A Evaporator

? Technical Contact: [ ] Phone: [ ]

? Waste Stream Name: [ ]

? Waste Type: [(LLW) Low-Level Waste ▼]

? Waste Form: ( ) Liquid ( ) Gas (•) Solid ( ) Sludge

? Waste Source: (•) Routine ( ) Non-Routine

? Describe the Waste Reduction Activity:

[ ]

? Was this activity the result of P2 in Design Opportunities? ( ) Yes (•) No

? Waste Min Approach: (•) Source Reduction ( ) Recycling ( ) Treatment ( ) Segregation

? Implementation Date: [ ]

? Amount Reduced: [ ]

? Amount Recycled: on-site [ ] off-site [ ]

? Units: [Cubic Meters]

? Density: [ ] Density Units: [ ]

? Estimated Cost of Implementation: [ ]

? Estimated Dollar Savings for Quarter: [ ]

? Programmatic Entry? ○ Yes ◉ No

DOE-HQ has determined the following to be Essential Data:

? Estimated Dollar Savings for Next 10 Years: [ ]

[ ]

Return to: Hanford Home Page or Pollution Prevention Home Page
For specific questions or comments see our Contacts List or send feedback to David Nichols.
URL: http://epaq105.rl.gov/pollprev/report/quarter/Addform.asp

D1.1.1 Guidance for Quarterly Waste Reduction Accomplishments Report

Help items for the Quarterly Report on Waste Reduction Accomplishments are provided below.

Fiscal Year:

Enter applicable FY.

Quarter:

Select applicable reporting quarter.

Facility Name:

This selection was made when you logged on and cannot be changed.

Technical Contact: Phone:

Provide the name and phone number of someone familiar enough with the details of this activity to answer questions on the technical content.

Waste Stream Name:

Please provide the Solid Waste Information Tracking System (SWITS) stream code, such as B003 or H016, if applicable. Otherwise, enter the descriptive stream name used at the facility to track cumulative quantities generated by this waste stream. If in doubt, check with the group responsible for tracking/reporting quantities generated. The combination of Contractor, Facility Name, and Waste Stream Name must be unique in order to properly track waste reductions and report a rollup at the end of the year.

If you are editing the entry then this data has been locked and cannot be changed.

Waste Type:

Click on the down-arrow at the end of the entry box and highlight the appropriate waste type. If the waste type you are reporting is not in the list then please contact your facility representative in the P2/WMin Group.

The choices are:

(LLW) Low-Level Waste
(MLLW) Mixed Low-Level Waste
(TRU) Transuranic Waste
(MTRU) Mixed Transuranic Waste

(HLW) High-Level Waste
(RHAZ) RCRA Hazardous Waste
(OHAZ) State Regulated Waste
(SAN) Solid Sanitary Waste
(LEFF) Process Waste Water *
(TSCA) TSCA-regulated waste (Polychlorinated Biphenyls (PCBs), etc.)
(WW-LLW) Low-Level Waste, waste water
(WW-MLLW) Mixed Low-Level Waste, waste water
(WW-TRU) Transuranic Waste, waste water
(WW-HLW) High-Level Waste, waste water
(WW-HAZ) RCRA- or State-Regulated Hazardous Waste, waste water
(WW-SAN) Sanitary Waste, waste water
(WW-MTSCA) TSCA Regulated Waste (PCB's, etc.), waste water

* This is a discontinued category. Please use the "WW-" categories for waste water streams.

Waste Form:

Select one of the 4 waste forms by clicking the radio button preceding the form type you wish to select. The 4 choices are:

Liquid - mostly or all liquid. May contain some solids.
Gas - containerized.
Solid - contains no free liquid.
Sludge - mostly solids but contains some free liquid.

Waste Source:

Selecting the correct waste source is essential since waste minimization goals and reports are different for non-routine waste sources. Click on the radio button that precedes the selection you wish to make. Only one can be selected. The definitions of routine and non-routine wastes seem to change from time to time. Consult the *Hanford Guide for Preparing and Maintaining Generator Group Pollution Prevention Program Documentation* (DOE/RL-95-103) for the current definition.

Describe the Waste Reduction Activity:

Include the reason for initiating the activity, what was reduced and the actions that enabled the reduction of waste. This description is all the information that is available to those outside the Hanford area so please be as descriptive as possible.

This description needs to be entered only once into the database. If you have already reported this activity and provided a description then this field may be left blank.

Was this activity the result of P2 in Design Opportunities?:

If you have identified opportunities through P2 in design, provide a description and a projected implementation date.

Update these items in future quarterly reports only if the status changes.

Waste Min Approach:

Select one of the four options provided by clicking on the radio button immediately preceding the correct approach.

Source Reduction
Recycling
Treatment
Segregation

DOE-HQ doesn't have an official definition for "segregation," but considers the following activities as segregation:

- waste stream segregation/sorting
- survey for release/green-is-clean
- decontamination for salvage/reuse/recycle
- contamination control/containment
- loss prevention/spill control
- co-mingling prevention

Source reduction is any activity which prevents the generation of the waste and includes such activities as procedure modification and product substitution.

Treatment is any activity that changes the physical nature of the waste.

Reuse/Recycling includes the use or reuse of a material.

If the waste was minimized using more that one approach then you must submit a form for each approach. Do not double report waste reduction quantities. Allocate the appropriate percentage to each approach. This may be 0-100%.

If you have questions please call your P2/WMin Group POC.

Implementation Date:

Enter the date this activity was first implemented. Use the format mm/yy for input. For example July 4, 2000 would be 07/00.

This field is only for new activities implemented during the current reporting period. If the activity was implemented prior to this reporting period then leave blank or enter N/A.

Amount Reduced:

If you are reporting recycling information then leave this field blank. Otherwise enter the numeric value for the total **Source Reduction** (including hazardous constituent reduction) achieved during this reporting period. The units (kilogram, cubic meters, etc.) for this reduction activity will be identified in the box immediately following the Recycling data area.

Amount Recycled:

If you are not reporting a recycling activity, no action is required for these fields.

For a recycling activity enter the numeric value(s) for the quantity recycled on-site, off-site, or both. Do not double report values. Then click on the down-arrow of the "Units" box to select the correct units for the quantity reported.

Report only the quantity(s) recycled during this reporting period.

Units:

Use the down-arrow in the "Units" box to bring up a list of units to select from. Highlight the correct units for the value(s) entered in the source reduction, on-site, and/or off-site field(s). Federal and State requirements are that solid sanitary waste, RCRA hazardous waste, state regulated waste, and toxic substances be reported in kilograms; all other waste types are reported by volume. Conversions will be made to the required units for you.

Density:

If you reported sanitary or solid waste by volume or reported one of the other waste types by weight (mass), then you must provide a density factor for conversion. Otherwise you can omit these two fields.

Enter a numeric value for the density. This may be a specific gravity (SpG), which is dimensionless, or a density having units of mass per unit volume, such as pounds per cubic foot. Next, click on the down-arrow in the "Density Units" box and select the appropriate units.

Estimated Cost of Implementation:

This field applies only to new activities that were implemented during the current reporting period.

Provide a dollar estimate of the total dollar cost to implement this waste reduction activity. Include equipment costs, charges for procedure modification and any expenses incurred

during design, installation, and testing.

Estimated Dollar Savings for Quarter:

Note – This field is for all activities regardless of the implementation date.

Enter the dollar amount of savings that were realized this reporting period through implementation of this waste reduction action. Do not include cost of implementation in the calculation. All the savings achieved from changes in disposal, packaging, handling, and administrative costs should be considered.

Programmatic Entry?:

Programmatic activities are extremely valuable in changing the culture of how the DOE conducts business; allows sites to be recognized for conducting these types of activities; and therefore, should be entered into the data base as accomplishments. Programmatic activities are defined as those activities that do not result in directly quantifiable waste reductions and cost savings. Examples include training, outreach, public awareness, research and development, conduct of PPOAs, infrastructure development, and recognition awards. In addition, other P2 activities for which a waste reduction cannot be quantified, but which actually reduced waste or resulted in a cost savings for the site, can also be reported as a Programmatic Activity. These activities include the donation of miscellaneous materials (computers, computer software, office furniture, etc.) to schools, research institutions, etc., which resulted in the site not having to dispose of the materials; and the use of the Material Exchange data base to transfer excess material to other DOE sites. It should be noted that for the above listed examples, if the waste reduction is known, these activities can be reported as Recycling.

Programmatic activities are tracked separately for inclusion in the annual report. They are not tracked as part of those activities that reduce waste and do not receive credit for waste reduction or cost savings in the overall rollup.

Estimated Dollar Savings for Next 10 Years:

Enter the dollar amount of savings that are anticipated over the next 10 years or the life of the activity if less than 10 years.

Do not include cost of implementation in the calculation. All the savings achieved from changes in disposal, packaging, handling, and administrative costs should be considered.

Status Report

A help screen is available for each input element. Simply click on the ? [Help] help button next to the input text.

Please supply the following information:

? **Facility Name: WMH P2**

Fiscal Year: [ ]

Quarter: (•) 1st ( ) 2nd ( ) 3rd ( ) 4th

? **Planned Budget** [ ]

? **Actual Budget** [ ]

? **Full Time Equivalents (FTEs)** [ ]

? **Status on Secretarial Goals:**

[ ]

The Following fields are optional. Any input you provide will be appreciated.

? **Status on Facility's Goals:**

[ ]

? **Status on Waste Minimization Assessments Conducted:**

[ ]

Planned opportunities identified through P2 in Design:

Comments:

Note: Clicking the "Reset Values" box will clear (erase) all data you have entered in the current form.

[Top of Document] or [Top of Form]

Return to Hanford Home Page or Pollution Prevention Home Page
For specific questions or comments see our Contacts List or send feedback to David Nichols
URL: http://tapeq105.rl.gov/pollprev/livreport/status/addform.asp

D1.1.2 Guidance for Quarterly Status Report

Help items for the Quarterly Status Report are provided below.

Facility Name:

This selection was made when you logged on and cannot be changed.

Fiscal Year:

Enter applicable FY.

Quarter:

Select applicable reporting quarter.

Planned Budget:

Please provide the amount, in dollars, planned for WMin activities for reporting period.

Actual Budget:

Please provide the amount, in dollars, actually spent for WMin activities during reporting period.

Full Time Equivalents (FTEs):

Please provide the number of FTEs involved in WMin activities during the reporting period.

Status on Secretarial Goals:

For each of the wastes listed below provide 1) Baseline data or basis for the goal, 2) statement of the goal, and 3) status as of the end of the reporting period in achieving that goal.

- Routine low-level radioactive waste
- Routine low-level mixed waste
- Routine hazardous waste
- EPCRA 313 toxic chemicals releases and offsite transfers from routine operations (pertains to chlorine only)
- Sanitary waste from all activities

Example for a first quarter, FY 2000 status report on MLLW generation with a baseline year (CY 1993) MLLW generation of 10 cubic meters:

The secretarial goal is 50 percent of the baseline year generation rate, or 5 cubic meters, and 5 cubic meters MLLW generation should be the goal for FY 2000 for the facility.

The facility generated 2 cubic meters MLLW in the first quarter. If this generation rate continues for the entire year, the facility goal will be exceeded by 4 x 2 - 5 = 3 cubic meters. Therefore, the facility should report that it is not on track for achieving the goal.

Example for a second quarter, FY 2000 status report on LLW generation for the situation of zero waste generation in the baseline year (CY 1993):

Because no LLW was generated by the facility in the baseline year (1993), the facility should have established its own baseline. The facility generated 25 cubic meters of LLW waste during the previous fiscal year (FY 1999) due to routine activities. A goal was established for FY 2000 to keep the generation of LLW at or below the amount generated during the previous fiscal year (FY 1999). During the first quarter, 12 cubic meters of LLW were generated, and 2 cubic meters were generated during the second quarter. Operations is projecting that they will generate 12 cubic meters during the remainder of the fiscal year for total projected annual generation of 26 cubic meters.

The status report may contain:

Routine LLW: 1) FY 1999 generated quantity (25 cubic meters) was the basis of the goal. 2) Goal was not to exceed the FY 1999 quantity. 3) A total of 14 cubic meters have been generated to date. It is anticipated that the goal will be exceeded by 1 cubic meter.

Status on Facility's Goals:

This is an optional reporting element and does not include the status towards achieving the Secretary of Energy Goals. Please provide for each goal:

- A brief statement of the goal
- Current status in attaining that goal

Status on Waste Minimization Assessments Conducted:

This is an optional reporting element.

List the title of each Pollution Prevention Opportunity Assessment (PPOA) completed during this reporting period. Indicate if this assessment has been made available to all Hanford Site contractors by adding it to the PPOA database.

Planned Opportunities Identified through P2 in Design:

If you have identified opportunities through P2 in design, provide a description and a projected implementation date.

Update this item in future quarterly reports only if the status changes.

Comments:

The comment field is used to document information that you wish to have included in your files. It will be maintained in the P2 database for you. However, the information is not reviewed by the P2/WMin Group nor used in any of the rollup reports prepared by the P2/WMin Group.

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APPENDIX E

WASTE MINIMIZATION CERTIFICATION FORM

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WASTE MINIMIZATION CERTIFICATION FORM

CERTIFICATION:

Facility or Contractor Name(s):

_____

_____

For the facility(ies) listed above, I certify that a waste minimization program is in place to reduce the volume and toxicity of hazardous waste that the facility(ies) generates to the degree determined to be economically practicable; and the proposed method of treatment, storage, and disposal is that practicable method currently available which minimizes the present and future threat to human health and the environment.

Manager: _____
(Printed name and signature)

Title: _____

Company: _____

Date: _____

This form should be signed and kept on file with generator pollution prevention documentation.

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