United States Department of Energy Richland Operations Office Environmental Protection Implementation Plan

November 9, 1993, to November 9, 1994

Coordinated by:
Quality, Safety, and Health (QSH)
Programs Division
U.S. Department of Energy
Richland Operations Office

Prepared by:
Regulatory Analysis
Westinghouse Hanford Company

Date Published
November 1993

**United States
Department of Energy**

P.O. Box 550
Richland, Washington 99352

Approved for Public Release

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

LEGAL DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, nor any of their contractors, subcontractors or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or any third party's use or the results of such use of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

This report has been reproduced from the best available copy. Available in paper copy and microfiche.

Available to the U.S. Department of Energy
and its contractors from
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831
(615) 576-8401

Available to the public from the U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
(703) 487-4650

Printed in the United States of America

DISCLM-1.CHP (1-81)

**United States
Department of Energy
Richland Operations
Office Environmental
Protection
Implementation Plan**
November 9, 1993, to
November 9, 1994

United States
Department of Energy
Richland, Washington

MASTER

Approved for Public Release

als
DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

Date Received: 11-8-93	INFORMATION RELEASE REQUEST	Reference: WHC-CM-3-4
Complete for all Types of Release		
Purpose ☐ Speech or Presentation ☐ Full Paper (Check only one suffix) ☐ Summary ☐ Abstract ☐ Visual Aid ☐ Speakers Bureau ☐ Poster Session ☐ Videotape		ID Number (include revision, volume, etc.) DOE-RL-93-97 List attachments. Date Release Required <p style="text-align: center;">11-9-93</p>
Title UNITED STATES DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE ENVIRONMENTAL PROTECTION IMPLEMENTATION PLAN		Unclassified Category UC-630 Impact Level N/A
New or novel (patentable) subject matter? ☒ No ☐ Yes If "Yes", has disclosure been submitted by WHC or other company? ☐ No ☐ Yes (Disclosure No(s)).		Information received from others in confidence, such as proprietary data, trade secrets, and/or inventions? ☒ No ☐ Yes (Identify)
Copyrights? ☒ No ☐ Yes If "Yes", has written permission been granted? ☐ No ☐ Yes (Attach Permission)		Trademarks? ☒ No ☐ Yes (Identify)
Complete for Speech or Presentation		
Title of Conference or Meeting N/A		Group or Society Sponsoring
Date(s) of Conference or Meeting	City/State	Will proceedings be published? ☐ Yes ☐ No Will material be handed out? ☐ Yes ☐ No
Title of Journal N/A		
CHECKLIST FOR SIGNATORIES		
Review Required per WHC-CM-3-4 Classification/Uncontrolled Controlled Nuclear Information Patent - General Counsel Legal - General Counsel Applied Technology/Export Controlled Information or International Program WHC Program/Project Communications RL Program/Project Publication Services Other Program/Project	Yes No ☐ ☒ ☒ ☐ ☒ ☐ ☐ ☒ ☒ ☐ ☐ ☒ ☒ ☐ ☒ ☐ ☐ ☒	Reviewer - Signature Indicates Approval Name (printed) Signature Date <hr/> S.W. Berglin <i>[Signature]</i> 11/11/93 <hr/> B.D. Williamson <i>[Signature]</i> 11/16/93 <hr/> D.J. Carrell <i>[Signature]</i> 11-9-93 <hr/> J.B. Hall <i>[Signature]</i> 11/15/93 <hr/> M.P. Curry <i>[Signature]</i> 11/4/93 <hr/>
Information conforms to all applicable requirements. The above information is certified to be correct.		
References Available to Intended Audience ☒ Yes ☐ No Transmit to DOE-HQ/Office of Scientific and Technical Information ☐ Yes ☒ No Author/Requestor (Printed/Signature) Date J.M. Nickels <i>[Signature]</i> 11-8-93 Intended Audience ☐ Internal ☐ Sponsor ☒ External Responsible Manager (Printed/Signature) Date D.J. Carrell <i>[Signature]</i> 11-8-93		INFORMATION RELEASE ADMINISTRATION APPROVAL STAMP Stamp is required before release. Release is contingent upon resolution of mandatory comments. <div style="text-align: center;"> </div>
Date Cancelled		Date Disapproved

PREFACE

The U.S. Department of Energy (DOE) Order 5400.1 (DOE 1988a), *General Environmental Protection Program*, establishes environmental protection program requirements, authorities, and responsibilities to ensure that DOE operations are in compliance with applicable Federal, State and local environmental protection laws and regulations, executive orders, and internal department policies. Chapter III of DOE Order 5400.1 requires that each DOE operations office prepare a plan for implementing the requirements of this order and update the plan annually. This update to the *U.S. Department of Energy-Richland Field Office Environmental Protection Implementation Plan* (DOE-RL 1989a), initially prepared November 9, 1989, is being issued to comply with the order. Responsibility for coordinating preparation of the annual update is assigned to the DOE Richland Operations Office, Office of Assistant Manager for Technical Supports Branch, Quality, Safety and Health Programs Division.

This page intentionally left blank.

CONTENTS

1.0	GENERAL DESCRIPTION OF U.S. DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE, ENVIRONMENTAL PROTECTION PROGRAM	1-1
1.1	PROGRAM SUMMARY	1-1
1.2	DOCUMENTATION REQUIREMENTS OF DOE ORDER 5400.1	1-5
1.3	THE U.S. DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE ORGANIZATION AND RESPONSIBILITIES	1-5
1.4	HANFORD SITE PRIME CONTRACTOR ORGANIZATION AND RESPONSIBILITIES	1-12
1.5	HEAD OF OPERATIONS OFFICE ASSIGNED RESPONSIBILITIES	1-18
2.0	NOTIFICATION OF ENVIRONMENTAL OCCURRENCES	2-1
2.1	ENVIRONMENTAL OCCURRENCE CATEGORIZATION, NOTIFICATION, AND REPORTING	2-1
2.2	OCCURRENCE NOTIFICATION CENTER	2-3
2.3	THE U.S. DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE REPORTING PROCEDURES AND RESPONSIBILITIES	2-3
2.4	CONTRACTOR REPORTING PROCEDURES AND RESPONSIBILITIES	2-5
2.5	RADIOACTIVE EFFLUENT AND ONSITE DISCHARGE DATA REPORTS	2-7
3.0	GENERAL PLANNING AND REPORTING	3-1
3.1	LONG-RANGE ENVIRONMENTAL PROTECTION PLAN	3-1
3.2	ANNUAL HANFORD SITE ENVIRONMENTAL REPORT	3-2
3.3	OFFICE OF MANAGEMENT AND BUDGET CIRCULAR A-106 SUBMITTAL TO DOE-HQ	3-2
4.0	SPECIAL PROGRAMS AND PLANS	4-1
4.1	GROUNDWATER PROTECTION MANAGEMENT PROGRAM	4-1
4.2	LIQUID EFFLUENTS MANAGEMENT PROGRAM	4-1
4.3	WASTE MINIMIZATION AND POLLUTION PREVENTION AWARENESS PROGRAM	4-2
5.0	ENVIRONMENTAL MONITORING PROGRAMS	5-1
5.1	EFFLUENT MONITORING	5-1
5.2	ENVIRONMENTAL SURVEILLANCE	5-4
5.3	MANAGEMENT OF MONITORING DATA	5-5
6.0	QUALITY ASSURANCE AND DATA VERIFICATION	6-1
6.1	QUALITY ASSURANCE PROGRAMS	6-1
6.2	LABORATORY CERTIFICATION	6-4
6.3	THE U.S. DEPARTMENT OF ENERGY LABORATORY QUALITY ASSURANCE PROGRAM FOR RADIOACTIVE MATERIAL	6-6
6.4	INDEPENDENT DATA VERIFICATION	6-6
7.0	REFERENCES	7-1

LIST OF EXHIBITS

1-1	Hanford Compliance to Documentation Requirements of DOE Order 5400.1, <i>General Environmental Protection Program</i>	1-6
1-2	Schedule of Required Documentation	1-7
1-3	The U.S. Department of Energy Richland Operations Office Organization Structure	1-10
1-4	Hanford Site Organizational Relationships	1-13
1-5	Westinghouse Hanford Company Organization Structure	1-14
1-6	Pacific Northwest Laboratory Organization Structure	1-15
1-7	Kaiser Engineers Hanford Company Organization Structure	1-16
1-8	Hanford Environmental Health Foundation Organization Structure	1-17
1-9	Head of Richland Operations Office Assigned Responsibilities	1-19
1-10	Environmental Protection Policy for U.S. Department of Energy Richland Operations Office	1-23
2-1	Environmental Occurrence Notification Flow Chart	2-4
5-1	Environmental Monitoring Responsibilities	5-2
6-1	Compliance Matrix for U.S. Department of Energy Order 5400.1 Quality Assurance Requirements	6-2

LIST OF TERMS

ACL	Analytical Chemistry Laboratory
AMA	Assistant Manager for Administration
AME	Assistant Manager for Environmental Management
AMO	Assistant Manager for Operations and Research
AMP	Assistant Manager for Projects
AMT	Assistant Manager for Technical Support
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
BAT/AKART	Best Available Technology/All Known and Reasonable Methods of Prevention, Control, and Treatment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CY	calendar year
D&D	decontamination and decommissioning
DME	Deputy Manager for Environment
DOE	U.S. Department of Energy
DOE-HQ	U.S. Department of Energy-Headquarters
EAP	Environmental Assurance, Permits, and Policy (Branch)
Ecology	Washington State Department of Ecology
EH-1	Assistant Secretary for Environment, Safety and Health
EHS	Environmental Health Sciences (Division)
EIS	Environmental Impact Statement
EMP	Environmental Monitoring Plan
EMSL	Environmental and Molecular Sciences Laboratory
EPA	U.S. Environmental Protection Agency
ERB	Environmental Remediation Branch
ERD	Environmental Restoration Division
FEMP	Facility Effluent Monitoring Plan
FY	fiscal year
HEC	Hanford Environmental Compliance (Project)
HEHF	Hanford Environmental Health Foundation
IH	Industrial Hygiene
KEH	Kaiser Engineers Hanford Company
NPDES	National Pollutant Discharge Elimination System
OMB	Office of Management and Budget
ONC	Occurrence Notification Center
OPD	Operations Division
NEPA	National Environmental Policy Act of 1969
PBD	Plans and Budget Division
PMD	Project Management Division
PNL	Pacific Northwest Laboratory
QA	Quality Assurance
QC	Quality Control
RCRA	Resource Conservation and Recovery Act of 1976
RDD	Research and Development Division
RL	U.S. Department of Energy Richland Operations Office
RPA	Regulatory Policy, Planning, and Analysis Branch
SAP	Sampling and Analysis Plan
SAS	Safeguards and Security Division
SEN	Secretary of Energy Notice

LIST OF TERMS (cont)

SID	Site Infrastructure Division
TFP	Tank Farms Project (office)
Tri-Party Agreement	Hanford Federal Facility Agreement and Consent Order
TSD	Technical Support Division
UCAT	United Engineers and Constructors/Catalytic Inc.
WAC	Washington Administrative Code
WHC	Westinghouse Hanford Company
WMD	Waste Management Division
WRAP	Waste Receiving and Packaging

1.0 GENERAL DESCRIPTION OF U.S. DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE, ENVIRONMENTAL PROTECTION PROGRAM

The Hanford Site in south-central Washington State covers about 560 mi² (1,450.3 km²) of semi-arid land located just north of the confluence of the Columbia and Yakima rivers. It is operated and managed by the U.S. Department of Energy (DOE) for the federal government. The DOE Richland Operations Office (RL) operates the site with the management support of various prime contractors. About 17,000 people work at the site.

From 1943 through 1989, a prime function of the site was producing plutonium for national defense, as well as managing the resulting wastes, conducting energy research, and developing new technology. These activities generated millions of gallons of stored radioactive and hazardous wastes and resulted in the creation of more than 1,100 waste sites.

The defense production mission at the Hanford Site has ceased, and disposal of the wastes and cleanup of the waste sites is now the major effort. The new mission is to transform the Hanford Site into the nation's model for the following:

- Excellence in environmental and waste management
- Development and application of research and advanced technologies
- Restoration of land and facilities for new productive uses.

The DOE is committed to disposing of the wastes and cleaning up all the inactive waste sites within 30 years (by 2018 because some

cleanup started in 1988). DOE is negotiating to extend the cleanup to 40 years. The wastes will be disposed of safely and permanently. Some of the facilities and waste sites at the Hanford Site will still be used in 2018. Cleanup of these sites will occur when they are no longer being used.

1.1 PROGRAM SUMMARY

1.1.1 Corrective Activities, Environmental Restoration, Waste Management, and Technology Development

The hub of today's programs at the Hanford Site are activities dedicated to managing stored and new wastes and cleanup of waste sites. To ensure focused planning and implementing efforts for these programs, management of the site is assigned to DOE's Office of Environmental Restoration and Waste Management. The office's goals and plans for the Hanford Site, along with other DOE sites, are outlined in the annual revision of the U.S. Department of Energy-Headquarters (HQ) *Environmental Restoration and Waste Management Five-Year Plan, Fiscal Years 1993-1997* (DOE 1991a). The *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al. 1992) specifies cleanup priorities and *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) or *Resource Conservation and Recovery Act of 1976* (RCRA) compliance actions required at the Hanford Site. Detailed plans for the site that reflect Tri-Party Agreement

commitments are contained in the annual revision of the *Environmental Restoration and Waste Management Site-Specific Plan for the Richland Operations Office* (DOE-RL 1991a).

The site-specific plans define how the corrective activities, environmental restoration, waste management operations, and technology development programs are to be conducted. They describe the activities required at the Hanford Site to ensure compliance with applicable laws and regulations, to restore inactive waste sites for potential future uses, and to manage and dispose of stored and newly created wastes in a safe and regulatory-compliant manner.

The costs of the activities required to achieve environmental compliance in managing and disposing of wastes, to clean up the inactive waste sites, and to develop the technology to accomplish these activities are provided in the site-specific plan for the Hanford Site. (For further information on the plans, see Section 3.1.)

Compliance Activities. Compliance activities are those required to bring active and standby facilities that are currently out of compliance with Federal, state, local, and internal DOE requirements into compliance. These activities include obtaining operating permits for treatment, storage, and disposal facilities in accordance with the requirements of the RCRA and applicable Washington State regulations. Other RCRA compliance activities include construction of new mixed waste storage facilities and drilling of additional groundwater monitoring wells.

Compliance activities also involve monitoring and managing wastes and effluents to meet requirements of applicable environmental laws including the

RCRA, Clean Air Act of 1977, Clean Water Act of 1977, and Toxic Substances Control Act of 1976.

Environmental Restoration. Inactive site cleanup is required under CERCLA and RCRA 3004(U). The cleanup of the approximately 1,100 inactive waste sites at the Hanford Site is conducted through the Environmental Restoration Program.

Funding is provided within this program to accomplish remedial actions for past waste disposal sites, and to decontaminate and decommission (D&D) surplus facilities. The remedial action program manages, coordinates, and supports cleanup of solid and liquid waste disposal sites and spill areas, including interim stabilization for preventing contamination spread.

The sitewide waste minimization program also is conducted through the Environmental Restoration Program.

Waste Management. The Hanford Site generates and stores both radioactive and hazardous wastes, which must be managed and disposed of in a safe and environmentally sound manner.

DOE Order 5820.2A, *Radioactive Waste Management* (DOE 1988b), establishes policies, guidelines, and minimum requirements for managing radioactive and mixed wastes and contaminated facilities. The Hanford Site has implemented the order as outlined in *Implementation Plan for Hanford Site Compliance with U.S. Department of Energy Order 5820.2A* (DOE-RL 1989b). An implementation summary table is contained in the *Environmental Restoration and Waste Management Site-Specific Plan for the Richland Operations Office* (DOE-RL 1991a). This plan defines all major programs dedicated to the management of

wastes and decommissioning of radioactively contaminated facilities.

The Hanford Site is in compliance with most of the requirements of DOE Order 5820.2A; however, full compliance with all the provisions will take several years. For example, the requirement to dispose of retrievable high-level waste cannot be fully implemented until a national repository is constructed and operable.

Technology Development. The goal of the technology development program is to provide new technologies that improve environmental restoration and waste management operations. Specific near-term goals have been identified in site characterization and assessment methods, and in waste minimization, waste treatment, and remediation technologies. The technology development program also has established near-term goals for the transportation program and the educational outreach program. Site implementation of developed technologies will be accorded high priority.

In September 1993, DOE and Washington State sponsored a Hanford Summit, a national forum on environment, technology, and the economy. The summit examined opportunities and new relationships for making the Hanford Site a model of economic development partnership, and the barriers to achieving that model. The Governor's Office would like to see the Hanford Site and Tri-Cities become the nation's model for technology transfer.

1.1.2 Environmental Monitoring and Surveillance

Hanford Site environmental monitoring and surveillance requirements are met through dedicated and comprehensive

programs. (See Section 5.0 for descriptions of the programs.)

Revisions to the *National Emission Standards for Hazardous Air Pollutants*, Title 40, Code of Federal Regulations (CFR), Part 61, Subpart H, require more stringent monitoring and control of releases. New environmental radiation protection requirements have been established by DOE Order 5400.5, *Radiation Protection of the Public and the Environment* (DOE 1990a). A DOE document, *Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance* (DOE 1991b), provides prescriptive requirements for monitoring and surveillance. Tri-Party Agreement Milestone M-17-12 also specifies liquid effluent sampling, monitoring, and reporting requirements for specified effluent streams.

A "Hanford Site Environmental Monitoring Plan (EMP)" (DOE-RL 1991b) addresses all requirements for environmental monitoring including effluent monitoring and environmental surveillance.

1.1.3 Liquid Effluents

Discharge of contaminated liquids to the soil column on the Hanford Site has been significantly reduced to levels of half the volume discharged in calendar year (CY) 1985 (WHC 1989). This reduction results from plant and process shutdowns, facility improvements and upgrades, and waste minimization controls throughout the site. At present, only 28 of the original 33 major liquid effluent streams are active. The Westinghouse Hanford Company (WHC)/RL Liquid Effluent Treatment Program is responsible for eliminating the contaminated liquid discharge by June 1995 for the

Phase I Streams and October 1997 for the Phase II streams. The Tri-Party Agreement Milestone M-17-00, with its 92 interim milestones (i.e., M-17-06), and the State Waste Discharge Permit Program Consent Order (No. DE 91NM-177) (Ecology 1990) mark progress toward meeting this responsibility. Determining the best available technology (BAT) that is economically achievable is being used to eliminate disposal of contaminated effluents to the soil column. Every stream is undergoing a BAT evaluation, to find the technology best suited for treating that stream. This evaluation includes detailed analysis of the stream composition, review of all existing treatment systems used to treat similar streams, and a thorough review and interpretation of environmental regulations. The determination of BAT on a liquid effluent will occur only after the effluent meets all release limits that apply. After we determine BAT and the Environmental Protection Agency (EPA) and Washington State Department of Ecology (Ecology) concur with our determination, a liquid is considered suitable for discharge to the environment, including the soil column. Progress of work completed and forecast of work remaining are reported in the Liquid Effluent Treatment Program Multi-Year Program Plan and the Site-Specific Five-Year Plan or Hanford Overview.

1.1.4 Groundwater Protection

To monitor and assess groundwater quality, more than 700 wells are sampled for RCRA and CERCLA characterization, operational monitoring, and sitewide monitoring (i.e., groundwater surveillance).

1.1.5 National Environmental Policy Act Documentation

All construction, disposal, and cleanup projects and activities are documented as directed by the *National Environmental Policy Act of 1969* (NEPA); DOE Order 5440.1E, *National Environmental Policy Act Compliance Program* (DOE 1991c); and NEPA Implementing Procedures (10 CFR 1021, 40 CFR 1500-1508, 57 FR 15122). In accordance with the DOE order, RL has designated a NEPA Compliance Officer for its operations.

Currently, environmental assessments (EA) and environmental impact statements (EIS) are in the planning and initial-preparation stages for irradiated fuels on the Hanford Site, the Hanford Environmental Restoration Program, and for tank waste safety and disposal issues. The first EIS will be used in determining future management of irradiated fuels presently stored onsite. The second EIS, the Hanford Remedial Action EIS, will evaluate cleanup alternatives for inactive hazardous, low-level, high-level, transuranic, and mixed waste sites. The Tank Waste Remediation System EIS will address disposal of tank wastes, and tank management and safety issues, as well as evaluate final disposal of single-shell tank wastes.

In addition to documentation for the facilities and methods for disposing of the Hanford Site's stored wastes, appropriate documentation will be prepared for characterization and remedial action design supporting cleanup activities under RCRA and CERCLA.

1.1.6 Tri-Party Agreement

The majority of activities at the Hanford Site to achieve regulatory compliance, dispose of stored

wastes, and clean up inactive waste sites are conducted under the purview of the Tri-Party Agreement. The Tri-Party Agreement is a legally binding document written by DOE, EPA, and Ecology that establishes a compliance and Environmental Restoration Program for the Hanford Site.

The primary goals of the Tri-Party Agreement are to bring the Hanford Site into compliance with Federal and State hazardous waste laws and to clean up the waste sites in a timely manner. Cleanup decisions made under this agreement will include input from the public.

1.1.7 U.S. Army Corps of Engineers Involvement

On July 27, 1990, DOE and the U.S. Army Corps of Engineers signed a memorandum of understanding and an interagency agreement. The agreement delineates the Corps of Engineers' role in cleaning up the Hanford Site. It specifically covers the areas of engineering services, topographic and geologic surveys of inactive waste sites and monitoring wells, and management of waste site assessments and cleanup activities. Additional tasks may be undertaken after mutual agreement.

1.1.8 Environmental Oversight

Independent oversight activities provide an ongoing assessment of environmental protection efforts to ensure compliance with applicable regulations and standards.

The Tri-Party Agreement, along with environmental laws and regulations, allows oversight by the cognizant regulatory agency. In addition, the regulatory agencies will provide oversight for emission control and environmental sampling efforts.

Within RL and its contractors, environmental appraisals and audits are conducted by dedicated environmental compliance and independent oversight organizations and other authorities as mandated. Internal self-assessments also are performed by line organizations.

1.2 DOCUMENTATION REQUIREMENTS OF DOE ORDER 5400.1

DOE Order 5400.1, *General Environmental Protection Program* (DOE 1988a), identifies specific plans and reports required to support the Environmental Protection Program. Exhibit 1-1 shows the documentation and reporting requirements of the order and how specific primary documents or reports at RL provide or support compliance. A schedule identifying the required documents and reports and their issue dates is shown in Exhibit 1-2. Summaries of the activities this documentation describes are provided in later sections of this plan.

1.3 THE U.S. DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE ORGANIZATION AND RESPONSIBILITIES

RL is a multi-program operations office responsible for managing the Hanford Site and assigned Departmental programs. RL is a program execution office with full associated line management, oversight, and administrative support functions. Management and program implementation is accomplished through four major management and operating (M&O) contracts. The most current organization chart is from September 1993.

Exhibit 1-1. Hanford Compliance to Documentation Requirements of DOE Order 5400.1, *General Environmental Protection Program*.

Exhibit 1-2. Schedule of Required Documentation.

Report/Plan	Issued/Comment	Review/Update	Due Date
Environmental Protection Implementation Plan (DOE-RL 1989a)	Revision 2 was issued in October 1992.	Annual/Annual	November 9 every year (DOE/RL-92-52)
<i>Environmental Restoration and Waste Management Site-Specific Plan for the Richland Operations Office^a</i> (DOE-RL 1991a)	Plan first issued September 1991. Current Plan revised Sept. 1992.	Annual/Annual	September 1993
Annual Hanford Site Waste Reduction Report (DOE-RL 1991c)	First report was issued in March 1991. Also fulfills requirement of DOE Order 5820.2A.	Annual/Annual	March 31, 1993
Office of Management and Budget Circular A-106 Pollution Abatement Plan (OMB 1974)	Data input to DOE-HQ. EH-1 ^b establishes specific due dates. Last issue date was July 1991.	Semiannual/ Semiannual	May 1 and December 15
<i>Hanford Site Environmental Report 1992</i> (PNL 1993)	The report was issued in June 1993.	Annual/Annual	June 1 every year (PNL 868?)
<i>Hanford Site Groundwater Protection Management Program</i> (DOE-RL 1989c)	Plan was issued May 9, 1990.	Annual/Every 3 years	May 9, 1993
<i>Hanford Waste Minimization, Reduction, and Pollution Prevention Awareness Program Plan</i> (DOE-RL 1990a)	Initial plan revised May 1991.	Annual/Every 3 years	October 1993
<i>Environmental Monitoring Plan</i> (DOE-RL 1991c)	First plan issued Nov. 9, 1991.	Annual/Every 3 years	November 9, 1994
Biennial EPA Waste Minimization Report (DOE-RL 1990b)	Report was issued on March 9, 1990.	Biennially	March 1, 1992

^aFulfills long-range environmental protection plan.

^bAssistant Secretary for Environment, Safety, and Health.

The Office of Chief Counsel (OCC) provides legal advice and counsel to RL, assists in negotiating the principal operating contracts, and handles other significant matters affecting RL. There is no organizational substructure.

The Office of Communications (COM) develops and ensures implementation of RL public affairs programs and plans and directs and coordinates RL institutional relations, media relations, general public relations, intergovernmental affairs, congressional relations, and consumer affairs programs. The COM also is responsible for the *Freedom of Information Act* and *Privacy Act of 1974* programs. There is no organizational substructure.

The Safety Concerns Program (SCP) office develops and provides guidance to the site contractors to address the concerns of their employees and subcontractor employees. The SCP receives, investigates, conducts analyses of, and provides disposition of the safety allegations made by individuals. The SCP interfaces with HQ personnel, Inspector General, and other RL divisions to resolve these safety allegations. There is no organizational substructure.

As required by DOE Order 5700.6C, Attachment I, Section C: #2 (DOE 1991d), the Office of Performance Assessment (OPA) provides RL senior management with the capability to independently assess the RL line organization and the Hanford contractors in the following areas:

- Compliance with applicable regulations, standards, and DOE requirements
- Effectiveness in managing their programs' costs, schedules, and technical scope

- their opportunities for improvement and excellence beyond mere compliance with requirements.

OPA will assist senior management in ensuring that activities, programs, and operations are conducted in a safe, secure, healthful, high quality, and economically sound manner, and that they are being continuously improved. The basis of these evaluations will be the DOE orders, rules and directives, Secretary of Energy notices (SEN), State and Federal regulations, applicable laws, and industry standards and practices.

Part of this responsibility includes keeping RL management informed on the status and adequacy of these programs and providing notification of unsound conditions or practices, unsatisfactory work, or unapproved practices, etc., when necessary and stopping work that is evaluated as immediately dangerous to health or the environment or will result in a product of questionable quality. The responsibility also includes maintaining appropriate interface communications with HQ and the RL contractors.

The Office of Environmental Assurance, Permits, and Policy (EAP) develops environmental policy, guidance, and support for Hanford Site compliance with Federal, State, and local environmental regulations, DOE orders and directives, and SENs. The EAP is also responsible for managing the integration activities required for the Tri-Party Agreement and ensuring that the Tri-Party Agreement milestones are managed and completed in accordance with the schedule negotiated with Ecology and the EPA, Region X.

The Chief Financial Officer (CFO) is responsible for planning and executing policies, programs, and procedures for financial management

and analysis and accounting. The CFO is also responsible for planning and executing the budget, evaluating management, managing Contract Finance, and conducting performance assessments for RL. The CFO also has overall responsibility for committing and disbursing funds and advising other management officials on financial management.

The Office of the Manager manages DOE's Hanford Activities and reports to the Director, Office of Environmental Restoration and Waste Management. The structure of the RL organization principally responsible for environmental protection activities and implementation of DOE Order 5400.1 is shown in Exhibit 1-3.

The Office of the Assistant Manager for Administration (AMA) manages the development, implementation, and control of RL programs for contractor labor-management relations, Federal personnel, procurement and contracting, and equal employment opportunity. The AMA also manages information systems, automated data processing, infrastructure management (landlord, etc.), real estate and cultural resources, personal property, and site services.

The AMA manages and directs safeguards and security programs. The AMA reports to the manager on activities directly managed by the Safeguards and Security Division (SAS). The SAS has three branches: Operations Security, Safeguards and Classification, and Personnel Security. These organizations are responsible for the security of the Hanford Site.

The Office of the Assistant Manager for Technical Support (AMT) establishes safety, quality, and health policy, standards, and guidelines in RL directives;

provides institutional oversight of the Pacific Northwest Laboratory (PNL); provides management and coordination for sitewide safety, quality, health, and environmental programs; provides technical support to other RL line management organizations; is responsible for RL's technology development (TD) programs, and integrates long- and short-range planning for the Hanford Site, including the Hanford Environmental Restoration/Waste Management Five-Year Plan and the Hanford Site Strategic Plan.

The Office of the Assistant Manager for Waste Management (AMW) develops and implements operating policies for Waste Management and Operations and Transition facilities; plans, coordinates, and manages program activities for solid waste, liquid effluents, analytical services, traffic management, and the stabilization and transition of nuclear facilities from shutdown to D&D and environmental restoration. In addition, AMW plans, implements, and manages nuclear energy activities for the Hanford Site.

The Office of the Assistant Manager for Environmental Management (AME) manages the Environmental Restoration Program for the Hanford Site including near-term and long-term planning, site preliminary assessment and performance assessment, investigation and characterization, feasibility studies, remedial design, and remedial action for remediation of approximately 1,150 inactive waste sites. The AME also manages the D&D program for the Hanford Site including safe, cost-effective surveillance, maintenance, and decommissioning of more than 100 surplus facilities. In addition, the AME also provides management, oversight, and guidance on RL major construction projects. The AME also provides direction for the

**Exhibit 1-3. The U.S. Department of Energy Richland Operations Office
Organization Structure.**

**U.S. Department of Energy
Richland Operations Office**

September 1993

H8311006.1

development and implementation of project management control systems for these projects. The AME has principal cognizance over the performance of the onsite Engineer/Constructor (E/C) contractor.

The Tank Waste Remediation Systems Program Office (TWRS) is responsible for the management and integration of the tank waste storage and tank waste disposal programs on the Hanford Site. The TWRS program's primary mission involves resolving several waste tank safety issues; maintaining safe storage; and characterizing, retrieving, treating, immobilizing, and storing the waste until it can be disposed of permanently. The TWRS Program contributes to DOE's ability to permanently dispose of defense wastes by safe, environmentally acceptable, and cost-effective methods. TWRS provides executive oversight to these major programmatic divisions: Tank Waste Disposal and Tank Waste Projects.

Responsibilities for environmental protection are described below.

The assistant managers for Operations and Research (AMO); Environmental Assurance, Permits, and Policy; and Technical Support (AMT) report directly to the manager. The Assistant Manager for Environmental Management (AME), and the Assistant Manager for Tank Waste Disposal report to the DME.

The Operations Division (OPD) is responsible for environmental protection for the operation of research production and inactive facilities. The OPD contains the Reactor Programs, Operations, and the Facilities Surveillance Branches, each with line responsibilities for nuclear facilities.

The Waste Management Division (WMD) is responsible for waste management operations and transportation packaging and development. The WMD contains the Solid Waste and Transportation, Liquid Waste, Analytical Services, and Research and Development Division (RDD) branches. These organizations are responsible for the programmatic and environmental compliance aspects of waste management facilities and operations, including the Hanford Environmental Compliance (HEC) Project. The HEC Project consists of 15 construction subprojects that provide environmental compliance at the Hanford Site.

The Tank Farms Project (TFP) Office strengthens the day-to-day oversight of operations in the Hanford Site tank farms and reports directly to the manager.

The Project Management Division (PMD) is responsible for engineering and construction-related activities. The PMD contains the Facilities, Environmental, and Waste Projects branches, which are responsible for ensuring environmental compliance for engineering and construction activities in a line management capacity.

The AMT reports to the manager on activities directly managed by the Quality, Safety, and Health Programs Division (QSH). In addition, the AMT is responsible for developing the *Environmental Restoration and Waste Management Five-Year Plan* (DOE 1991a) and this document.

The QSH oversees environmental and health management of the site and is responsible for operating the occupational medical facilities and maintaining environmental compliance within these facilities. The QSH contains three branches: (1) the Public Safety and Medical Programs Branch, (2) the Quality Programs

Branch, and (3) the Occupational Safety Programs Branch.

The Public Safety and Medical Programs Branch provides oversight of the health maintenance contractor to ensure environmental compliance of medical service facilities and manages the Public Safety and Resources Protection Program. This branch also manages several other programs including environmental surveillance, meteorology, climatology, and wildlife resources (i.e., Hanford Environmental Oversight, Groundwater Surveillance, Surface Environmental Surveillance, Hanford Environmental Dosimetry, Wildlife Resources Monitoring, and Ecological Resources Management). The Quality Programs Branch verifies that contractor Quality Assurance (QA) programs and other selected documents comply with governing requirements. The Occupational Safety Programs Branch administers occupational safety programs on site.

The AME reports to the DME. The AME manages the Environmental Restoration Division (ERD) and the RDD. Reporting to the AME is the PMD. The PMD contains the Facilities Project Branch, Environmental Projects Branch, Waste Projects Branch, the Environmental and Molecular Sciences Laboratory (EMSL) Project Office, and the Waste Receiving and Packaging (WRAP) Project Office.

1.4 HANFORD SITE PRIME CONTRACTOR ORGANIZATION AND RESPONSIBILITIES

The Hanford Site prime contractors are as follows:

- WHC (including its subcontractor Boeing Computer Services, Richland)

- Pacific Northwest Laboratory (PNL), operated by Battelle Memorial Institute
- Kaiser Engineers Hanford Company (KEH); now a subcontractor to WHC
- Hanford Environmental Health Foundation (HEHF).

The organizational relationships of the prime contractors to RL for management and operation of the Hanford Site are shown in Exhibit 1-4. The organization structures for the prime contractors are shown in Exhibits 1-5 through 1-8. A reorganization is planned the end of the 1993 fiscal year as a result of subcontracting KEH with WHC. The new reorganization will be included in the next revision.

Each contractor is responsible for safe and environmentally sound operation and maintenance of its designated facilities, specific facility upgrades, operational support, waste management, and monitoring of operations and effluents for environmental compliance. Plant or building managers have first-line responsibility to operate their facilities in a safe, environmentally sound manner.

Most waste operations activities, environmental corrective and remedial actions, and D&D of surplus facilities conducted at the Hanford Site are performed by, or under contract to, WHC, the operations and engineering contractor. WHC is assigned responsibility for managing the Waste Management Program, the Environmental Restoration Program, and the HEC Project. WHC has the lead responsibility for supporting RL in meeting the Tri-Party Agreement (Ecology et al. 1992) requirements. Other Hanford Site contractors must satisfy the

Exhibit 1-4. Hanford Site Organizational Relationships.

November 1991

99110061.1

Exhibit 1-5. Westinghouse Hanford Company Organization Structure.

Exhibit 1-6. Pacific Northwest Laboratory Organization Structure.

Exhibit 1-7. Kaiser Engineers Hanford Company Organization Structure.
(Reorganization FY 1994 as result of subcontracting with MHC)

Exhibit 1-8. Hanford Environmental Health Foundation
Organization Structure.

9/8/92 79209047.1

Tri-Party Agreement requirements as subcontractors of WHC or as prime contractors to RL.

WHC also is charged with coordinating the development of a guidance document to be used for preparing Hanford Site facility effluent monitoring plans (FEMPs). This guide is to be used to prepare FEMPs for DOE-controlled facilities as required by DOE orders. The RL has required that all operational effluent monitoring plans be completed by November 9 of each year. In addition, RL contractor policies require completion of the FEMPs before facility startup for new or modified facilities requiring FEMPs.

The research and development contractor, PNL, performs environmental research and development, provides an independent sitewide environmental surveillance program, and provides technical support to RL and the other site contractors. PNL is a multi-program DOE laboratory and, as such, is in a unique position to bring the research and development resources of all DOE programs to bear on Hanford Site environmental problems. The Environmental and Molecular Sciences Laboratory (EMSL) will be key in this process. The EMSL, supported by both the DOE Office of Environmental Restoration and Waste Management and the Office of Energy Research, will house programs that focus on Hanford Site environmental problems.

KEH, the engineering and construction services contractor, ensures that environmental design requirements are met and provides project and construction support. KEH will become a subcontractor to WHC and many of its functions will combine with the WHC equivalent functions.

HEHF provides occupational health and industrial hygiene (IH) services for the Hanford Site. The Environmental Health Sciences (EHS) Division provides sampling and analytical services to evaluate worker exposures related to occupational health and to monitor sanitary drinking water to ensure that it is within chemical and biological parameters. In the past, EHS has also offered services to evaluate effluents and analyze environmental media. At DOE's request, these environmentally oriented services are being eliminated.

1.5 HEAD OF OPERATIONS OFFICE ASSIGNED RESPONSIBILITIES

The responsibilities assigned by DOE Order 5400.1 (DOE 1988a) to the Manager of RL are fulfilled as described in Exhibit 1-9.

Exhibit 1-9. Head of Field Office Assigned Responsibilities. (sheet 1 of 5)

Requirement	Implementation
<p>1. Issue and update, as required, a general environmental statement that reflects the statement of policy in the order and contains broad environmental protection goals for all facilities and activities for which they are responsible.</p>	<p>1. An environmental protection policy for RL was distributed to all RL and contractor personnel in 1990. The policy emphasizes the commitment to environmental protection, adherence to all environmental laws and regulations, and the needs for increased environmental awareness across all facilities, contractors, and programs. A RL Strategic Plan also was issued that describes the Hanford vision to clean up the site and, in so doing, become internationally recognized in several areas:</p> <ul style="list-style-type: none"> • Environmental research, development, and demonstration • Science • Operational excellence in all that we do. <p>It will be reviewed and updated as needed.</p>
<p>2. Ensure that all operations under their authority comply with applicable environmental protection laws, regulations, and directives.</p>	<p>2. Through AMO, the OPD and WMD; through AME, the ERD, and RDD; through AMA, the SID; and through the AMD, the Hanford Waste Vitrification Plant Engineering Branch are assigned responsibility for environmental protection of operations under their individual purview. The Office of Chief Counsel assists in interpreting laws and regulations. Further, the EAP assists all operations under RL's purview to comply with all applicable environmental protection laws, regulations, and directives. Through the manager, the Office of Performance Assessment independently assesses compliance status of representative activities.</p>

Exhibit 1-9. Head of Field Office Assigned Responsibilities. (sheet 2 of 5)

Requirement	Implementation
<p>3. Identify significant environmental compliance issues that require resolution and coordination, and advise the DOE Assistant Secretary for Environment, Safety and Health (EH-1) and the HQ program elements in a timely manner.</p>	<p>3. In accordance with SEN 7A-90, <i>Policy on Line Management's Responsibility to Achieve Environmental Compliance</i> (DOE 1990b), and SEN 20-90, <i>Interaction with Internal and External Oversight Organizations</i> (DOE 1990c), the line organizations, singularly and in cooperation with internal and external oversight organizations, identify significant environmental compliance issues that require review and resolution. Issues requiring involvement of EH-1 or other HQ elements receive high priority and are coordinated with HQ environmental guidance and compliance staff.</p>
<p>4. Ensure that all required environmental permits are secured from the appropriate regulatory agency in a timely fashion. Consistent with the requirements of DOE Order 5400.2A (DOE 1989), in negotiating the terms and conditions of permits, settlements, consent orders, consent decrees, or other legal or administrative documents, every effort shall be made to ensure that permit requirements and conditions reflect the requirements of environmental regulations, consistent with national security interests, and are cost effective.</p>	<p>4. The EAP ensures that all required environmental permits are secured from the appropriate regulatory agency in a timely fashion. The RL line organizations, together with the EAP and the Office of Chief Counsel, negotiate the terms and conditions of permits, consent orders, consent decrees, or other legal or administrative documents to ensure that permit requirements and conditions reflect the requirements of environmental regulations, consistent with national security interests, and are cost effective.</p>

Exhibit 1-9. Head of Field Office Assigned Responsibilities. (sheet 3 of 5)

Requirement	Implementation
5. Conduct environmental appraisals of programs, projects, and facilities in accordance with DOE Order 5482.1B (DOE 1986), and other Environment, Safety and Health requirements, and provide copies of appraisal reports to EH-1 and the appropriate program office.	5. Through RL surveillance, audit, and appraisal programs, selected programs, projects, and facilities are reviewed in accordance with DOE Order 5482.1B and other Environment, Safety and Health requirements. Copies of all appraisal, audit, and surveillance reports are supplied to EH-1 and the appropriate HQ program office. Follow-up appraisals of required corrective actions are made and reported on similarly.
6. Establish and maintain liaison and cooperative programs with the appropriate Federal, regional, State, and local environmental officials to facilitate effective management.	6. The EAP interfaces with the appropriate Federal, regional, State, and local environmental officials on environmental compliance and protection issues, including administering the Tri-Party Agreement (Ecology et al. 1992), RCRA permits, <i>Clean Air Act of 1977</i> Permits, National Pollutant Discharge Elimination System (NPDES) permits, environmental surveillance, and wildlife resources protection.
7. Develop and implement programs that direct contractors to execute environmental protection compliance programs and policies and provide for oversight, confirmation, and independent verification of those contractor programs.	7. The RL line organizations develop and implement programs that direct contractors to execute environmental protection programs and policies. The QSH develops and implements independent environmental surveillance programs. The Office of Performance Assessment conducts appraisals to provide for oversight, confirmation, and independent verification of contractor programs.
8. Prepare long-range environmental protection plans in accordance with guidance issued by EH-1.	8. Through the annually updated DOE-HQ <i>Environmental Restoration and Waste Management Five-Year Plan Fiscal Years 1993-1997</i> (DOE 1991a) and the <i>Environmental Restoration and Waste Management Site-Specific Plan for the Richland Operations Office</i> (DOE-RL 1991a), long-range environmental protection plans are prepared in accordance with the guidance by EH-1.

Exhibit 1-9. Head of Field Office Assigned Responsibilities. (sheet 4 of 5)

Requirement	Implementation
<p>9. Ensure that budget requests provide for required environmental protection upgrades and corrective action and that they are timely and consistent with pollution abatement plans prepared as required by the Office of Management and Budget (OMB) Circular A-106 (OMB 1974).</p>	<p>9. Through RL line organizations, the funding needs for environmental protection upgrades and corrective activities are determined. Through CFO, the BUD's Budget Analysis Branch includes requests for environmental protection upgrades and corrective activities identified by AME or AMA in the succeeding budget cycle. The ERD's ERB ensures that these requests are consistent with pollution abatement plan input to HQ prepared as required by OMB Circular A-106.</p>
<p>10. Prepare biannual pollution abatement plans required by OMB Circular A-106 and submit to EH-1 in accordance with a schedule provided by that office.</p>	<p>10. The ERD's ERB coordinates and reviews preparation of biannual pollution abatement plan input to DOE-HQ required by OMB Circular A-106 with assistance/concurrence by the Budget Analysis Branch in accordance with the guidance and a schedule from EH-1.</p>
<p>11. Provide EH-1 with all the environmental information and documentation that is requested.</p>	<p>11. Through the actions of the RL line organizations, the EAP, and the QSH's Public Safety and Medical Programs Branch, all requested environmental information and documentation are provided to EH-1.</p>
<p>12. Curtail or suspend any operation that poses a clear and present danger to members of the public or the environment.</p>	<p>12. The AMA, AMO, AMT, AME, AMD, and AMP have the authority and responsibility to curtail or suspend any operation that poses a clear and present danger to members of the public or the environment.</p>

Exhibit 1-9. Head of Field Office Assigned Responsibilities. (sheet 5 of 5)

Requirement	Implementation
<p>13. Provide for community public information and education programs concerning DOE environmental protection programs, consistent with the requirements of environmental regulations and national security interests.</p>	<p>13. The RL community public information and education programs concerning environmental protection programs are conducted in compliance with the requirements of environmental regulations. These programs are conducted by line organizations; by the Office of Communications; through EAP's activities with the Tri-Party Agreement; and through TSD's Public Safety and Medical Programs Branch Community Involvement and Awareness Program, consisting of educational videos, brochures, and community-operated environmental surveillance stations.</p>

This page intentionally left blank.

2.0 NOTIFICATION OF ENVIRONMENTAL OCCURRENCES

This section provides a summary of requirements for environmental occurrence notification, as defined by DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information* (DOE 1990d). It also summarizes and references the procedures Hanford Site contractors and RL use for notifying the Headquarters Emergency Operations Center, as well as the Assistant Secretary for Environment, Safety and Health (EH-1), of a significant nonroutine release of any pollutant or hazardous substance. The function of the Occurrence Notification Center (ONC) is outlined, including the mechanism for ensuring oral notifications are made.

This section identifies RL and contractor organizational units responsible for notifications and documentation of measures taken in response to environmental occurrences. It defines how these reports are made available to regulatory agencies and the general public.

This section also describes how "Radioactive Effluent and Onsite Discharge Data Reports" are submitted to the Waste Information Systems Branch, EG&G Idaho, Inc. Organizational units responsible for providing these reports are identified.

2.1 ENVIRONMENTAL OCCURRENCE CATEGORIZATION, NOTIFICATION, AND REPORTING

DOE Order 5000.3B provides the principal requirements for categorization, notification, reporting, and processing of occurrences related to safety, health, security, property, operations, or environment up to and

including emergencies. RL has issued DOE-RL Order 5000.3B (DOE-RL 1990c), which assigns RL and its contractors responsibilities and provides additional requirements.

For environmental occurrences, satisfying the requirements of DOE Order 5000.3B and DOE-RL Order 5000.3B also satisfies the categorization, notification, and/or reporting requirements of DOE Order 5400.1 (DOE 1988a); DOE Order 5484.1, *Environmental Protection, Safety, and Health Protection Information Reporting Requirements* (DOE 1981); DOE Order 5500.2B, *Emergency Categories, Classes, and Notification and Reporting Requirements* (DOE 1991e); and DOE Order 5500.3A, *Planning and Preparedness for Operational Emergencies* (DOE 1991f). Also covered are the requirements of DOE-RL Order 5484.1 (DOE-RL 1983), which assigns additional requirements and responsibilities at RL, and reporting requirements contained in DOE-RL Order 5484.2A (DOE-RL 1984), which are applicable to environmental occurrences.

Categorization, notification, and reporting requirements defined in DOE Order 5000.3B are summarized below. Specific requirements for notifying Ecology are defined.

Categorization. The categories of reportable environmental occurrences are described below.

1. **Emergencies**--Emergencies are the most serious occurrences and require an increased alert status for onsite personnel and, in specified cases, for offsite authorities. The detailed definitions and classifications of emergencies and appropriate emergency responses to be taken are

provided in DOE Order 5500.2B. (Definitions of the nature of occurrences to be included in each category are presented in DOE Order 5000.3B.)

2. **Unusual Occurrences**--An unusual occurrence is a nonemergency occurrence that has significant impact or potential for impact on safety, environment, health, security, or operations.
3. **Off-Normal Occurrences**--Off-normal occurrences are abnormal or unplanned events or conditions that adversely affect, potentially affect, or are indicative of degradation in the safety, security, environmental, or health protection performance or operation of a facility.

Notification. Requirements for oral and written notification of reportable occurrences are listed below. The ONC transmits a facsimile copy of the notification report to the responsible contractor for verification by the contractor that the appropriate notification(s) was made.

- **Emergencies**--Oral notification to DOE and offsite authorities of alert, site, and general emergencies shall be made within 15 minutes or less of categorization. Written notification shall be made as soon as practical but, in any event, within 24 hours of categorization, using the Notification Report (items 1 through 18 of the Occurrence Report).
- **Unusual Occurrences**--Oral notification to DOE of unusual occurrences shall be as soon as sufficient information is obtained to indicate the general nature and extent of

the occurrence but, in any event, within 2 hours of categorization. Written notification shall be made within 24 hours of categorization using the Notification Report.

- **Off-Normal Occurrences**--For off-normal occurrences, oral notification to DOE is not mandatory, but written notification shall be made within 24 hours of categorization using the Notification Report.

In addition to the initial oral notifications, follow-up oral notification shall be made to DOE for any of the following:

- Any further degradation in the level of safety of the facility or other worsening conditions, including those that require the declaration of any of the emergency action levels, if such a declaration has not been previously made
- Any change from one emergency action level to another
- Termination of an emergency.

All release notifications to Ecology are made by the ONC after the ONC is directed to make the notifications by the appropriate contractor environmental protection group. Revised state dangerous waste regulations on spill reporting went into effect on August 8, 1992. These regulations require Ecology to be notified when any dangerous waste or hazardous substance is intentionally or accidentally spilled or discharged into the environment (unless otherwise permitted) such that human health or the environment is threatened, regardless of the quantity of dangerous waste or hazardous substance.

Reporting. An Occurrence Report shall be prepared for all reportable occurrences. The submission of Occurrence Report information is required as follows:

1. The Notification Report shall be prepared as required and shall constitute the first 18 items of the Occurrence Report.
2. Within 10 working days of categorization, the contractor shall submit an Occurrence Report using the information available at the time.
3. The Occurrence Report shall be updated when significant new information is available.
4. The final Occurrence Report shall be prepared and distributed by the contractor in accordance with DOE Order 5000.3B when the cause of the occurrences has been analyzed, root cause and contributing causes have been determined, corrective actions have been determined and scheduled, and lessons learned have been identified. The final Occurrence Report shall be approved by DOE.

2.2 OCCURRENCE NOTIFICATION CENTER

The Hanford Site's ONC was created to meet the requirements of DOE Order 5000.3B. The ONC is a 24-hour operational facility equipped to communicate information regarding occurrences at, or affecting, the Hanford Site to responsible management and offsite agencies. Although equipped and staffed by WHC personnel, the center is available for use by all site contractors. The facility is located in the Mineer-West Building adjacent to the Federal Building in Richland, Washington. It is constantly staffed by the ONC Duty Officer who can be reached on 376-2900.

The duty officer is responsible for remaining at the ONC at all times and supervising the center staff, ensuring that facility managers are notified of occurrences in their facilities, assisting the facility manager in making notifications, ensuring timely distribution of all reports and maintaining an Occurrence Report file for all categorized occurrences on the Hanford Site.

A prime function of the ONC staff is to notify HQ and appropriate regulatory agencies when required. The staff coordinates conference calls among the affected facility managers, the RL program office, and the HQ Emergency Operations Center to ensure oral notification requirements are fulfilled. After concurrence with the contractor's environmental protection group, telephone calls to the regulatory agencies are made by the ONC if oral notification to these agencies is required. Follow-up written notifications are the responsibility of line organizations within RL. The contractor environmental protection organizations assist in preparing the notifications.

The flow chart in Exhibit 2-1 depicts how notifications are communicated from the occurrence site to HQ and the regulatory agencies. The procedures and responsibilities within RL and each contractor's organizations are described in the following sections.

2.3 THE U.S. DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE REPORTING PROCEDURES AND RESPONSIBILITIES

The RL facility line organizations are responsible for ensuring that contractor facility line organizations provide 24-hour coverage for reporting of

Exhibit 2-1. Environmental Occurrence Notification Flow Chart.

89110051.2

emergencies or unusual occurrences. Required notifications will be made to and by the ONC, as described in Section 2.2.

Follow-up documentation by the responsible programmatic organization will review the corrective actions that have been taken to remediate the release and prevent any further releases of this type.

2.4 CONTRACTOR REPORTING PROCEDURES AND RESPONSIBILITIES

2.4.1 Westinghouse Hanford Company

WHC has published MRP 5.14, Rev. 8, "Occurrence Reporting and Processing of Operations Information," as part of WHC-CM-1-3, *Management Requirements and Procedures*.

This procedure establishes the mechanisms to ensure consistent and timely reporting of occurrences to DOE and DOE contractor management about any events that could (1) affect the health and safety of the public, (2) seriously affect the intended purpose of DOE facilities, (3) have a noticeable adverse effect on the environment, or (4) endanger the health and safety of workers.

This procedure implements the requirements of DOE Order 5000.3B and provides for the prompt release to the public of occurrence reports and information.

The procedure also establishes requirements to review and evaluate occurrences to ensure that the significance, root causes, generic implications, and necessary corrective actions are identified and actions implemented to mitigate or correct occurrences and prevent recurrence. Requirements to distribute occurrence reports to DOE

operations and facilities also are established to prevent similar occurrences.

The responsibility for preparing and maintaining documentation of response actions is assigned within WHC as follows.

- Facility managers are responsible for categorizing facility occurrences; initiating the immediate recovery actions taken to stabilize facility conditions and the corrective actions to prevent recurrence; making occurrence notifications and notifying the ONC of all occurrences; preparing the notification, 10-day, update, and final occurrence reports; and approving the closeout of all corrective action items resulting from occurrences in their facilities.
- Environmental Protection is responsible for providing the ONC with information that satisfies notification requirements of regulatory agencies, including a list of regulatory agencies to be notified, as well as notifying those agencies. Regulatory Support is responsible for approving closeout of corrective action items resulting from environmental concerns identified as a result of occurrences.

2.4.2 Pacific Northwest Laboratory

Internal procedures govern off-normal event reporting by all PNL facilities. PNL is responsible for notifications to the ONC and the appropriate programmatic organization of RL and for future notifications and reports. Notifications, follow-up, and

corrective actions are in accordance with DOE orders and PNL policy.

Line management is responsible for event investigation and follow-up. Line managers make required notifications and prepare and issue reports. Follow-up responsibilities include implementing corrective actions, determining root causes, and reporting lessons learned.

The Facilities and Operations Directorate is responsible for evaluating Unusual Occurrence Reports for possible corrective actions, and verifies compliance to procedures through audits, surveillances, and other verification activities.

2.4.3 Hanford Environmental Health Foundation

The HEHF provides professional services in the areas of occupational medicine, behavioral health services, health promotion, and IH consulting and laboratory analysis. The HEHF has minimal potential for onsite or offsite environmental spills or releases. Employees discovering or involved in an environmental occurrence notify the HEHF Environment Safety and Health (ES&H) Office, which is then responsible for oral notification to the HEHF president or alternate. The ES&H Office then provides prompt oral notification to the ONC and the HEHF program office within the RL TSD. Notifications, categorization, and follow-up reporting proceed in accordance with DOE Order 5000.3B.

The ES&H Office is responsible for prompt investigation of the event, immediate corrective action, and development and implementation of permanent corrective actions. The ES&H Office will update the HEHF president or alternate as needed and will provide accurate information to

assist in the formulation of appropriate public information releases. The ES&H Office also prepares and submits initial, interim, and final occurrence reports.

2.4.4 Kaiser Engineers Hanford Company

All KEH personnel are responsible for reporting environmental occurrences, such as releases of hazardous substances, immediately to the KEH Environmental Compliance department. The reporting may be performed by the Kaiser Central Communications (KCC) pager process system. Notification of release is documented by means of a Spill Report Form. The Environmental Compliance department is responsible for investigating and documenting all spills using the Spill Report Form and the KEH Environmental Occurrence logbook.

If a release occurs that could be categorized under DOE 5000.3B as an emergency, an unusual occurrence, or an off-normal occurrence, the Environment Compliance Department immediately notifies the KEH Security and Emergency Preparedness Department (via the KCC process system after hours) to begin the occurrence categorization and reporting process mandated by DOE Order 5000.3B, and Kaiser Emergency Preparedness Program (EPP) Procedure 3, *Kaiser Occurrence Categorization and Reporting Process* (KEH 1990) from the KEH Environmental, Safety, and Health Program Manual. The Security and Emergency Preparedness Department will coordinate the preparation and submittal of preliminary and final occurrence reports as required by the provisions of DOE Order 5000.3B and Kaiser EPP 3.

The Environmental Compliance Department is responsible for

determining remedial actions required for compliance with applicable environmental regulations. Line management is responsible for implementing remedial actions and determining corrective actions required for mitigation of future occurrences. The Environmental Restoration Department provides technical assistance to line management throughout this process as required.

organizations and other Hanford contractors (i.e., PNL), compiled, and transmitted by the EEM group. The yearly information for air and liquid releases for each stream is transmitted electronically to EG&G, Idaho via the Secure Automatic Communications Network. A memo is sent to DOE-Idaho by the Environmental Permits and Policy Branch, with notification to EH-1 by a copy of the transmittal memo.

2.4.5 Other Subcontractors

Construction of the Hanford Waste Vitrification Plant is currently being performed by United Engineers and Constructors/Catalytic Inc. (UCAT), a subcontractor to WHC. UCAT is responsible for reporting environmental occurrences, such as releases of hazardous substances, immediately to WHC, in accordance with the reporting requirements of DOE 5000.3B. UCAT has a spill prevention countermeasure and control plan in place to effectively assist in managing a spill or release of hazardous substances to the environment.

2.5 RADIOACTIVE EFFLUENT AND ONSITE DISCHARGE DATA REPORTS

Environmental discharges and releases are determined through effluent monitoring programs (see Section 5.1, "Effluent Monitoring"). Effluent discharge and release data are submitted to WHC Effluent Emissions Monitoring (EEM) for compilation and reporting.

The nature and quantities of environmental releases are compiled by EEM and are reported annually to the Waste Information System Branch, EG&G Idaho. This is done through the Environmental Information System/Onsite Discharge Information System (EIS/ODIS), in which data are received from various WHC

This page intentionally left blank.

3.0 GENERAL PLANNING AND REPORTING

DOE Order 5400.1 (DOE 1988a) requires that field organizations implement specified programs and plans. The DOE order also requires that specific reports be prepared and delivered as part of the environmental protection programs, as shown on Exhibit 1-2, "Schedule of Required Documentation." This section of the Environmental Protection Implementation Plan describes RL's implementation actions to meet requirements for a long-range environmental protection plan, an annual Hanford Site environmental report, and a semiannual OMB Circular A-106 (OMB 1974). The assigned responsibilities for these activities are specified.

3.1 LONG-RANGE ENVIRONMENTAL PROTECTION PLAN

The DOE has committed to the cleanup of nuclear wastes at all its national facilities within 30 years. The planning to accomplish this is outlined in an annually issued national plan entitled *Environmental Restoration and Waste Management Five-Year Plan, Fiscal Years 1993-1997* (DOE 1991a), issued in September 1991. A preliminary draft of the fiscal year (FY) 1994-1997 Five-Year Plan was made available September 1993.

Starting in 1994, RL will no longer mandate site-specific five-year plans. RL has elected to proceed with the production of a successor to the Hanford Site five-year plan to fulfill commitments made before HQ announced the change. HQ will continue to produce the national Five-Year Plan which covers the entire DOE complex on a summary level. The Hanford Overview will replace the RL plan and will consist of 100 pages or

less. The Overview will combine information from several other documents, as well as provide a forum for public participation.

The HQ long-range environmental protection plan addresses the overall strategy for environmental and waste-related activities under the responsibility of the DOE Office of Environmental Restoration and Waste Management.

The requirement for a long-range environmental protection plan for the Hanford Site is satisfied by the *Environmental Restoration and Waste Management Site-Specific Plan for the Richland Operations Office* (DOE-RL 1991a). This plan supports the national plan and provides the detailed planning for the site. The plan initially was issued in December 1989 and is updated annually to provide detailed planning for the subsequent FY and broad planning for the ensuing five-year period. RL's site-specific plan provides detailed information for the following categories:

- Waste management operations
- Environmental restoration
- Technology development
- Corrective activities
- Expedited Response Actions.

The site-specific plan is supported by two others documents. One, *Overview of the Hanford Cleanup Five-Year Plan* (DOE-RL 1991d), presents the philosophy and a non-technical summary for environmental restoration and waste management. The other contains the many detailed activity data sheets that provide task descriptions, alternatives, cost estimates, and milestones for each WM and ER activity (DOE-RL 1991e).

The site-specific plan addresses most of the programs and activities that will require long-term planning for the cleanup of the Hanford Site. The plan is funding dependent, and planned activities are geared to conform to the annual appropriations for operation of the site. Notwithstanding funding allocations, program priorities provide first for ensuring the safety of the public and the environment from ongoing operations.

The responsibilities for coordinating and reviewing preparation of the RL submittal to the HQ Five-Year Plan and for preparing the RL site-specific plan are assigned to the office of the AMT. Preparation will be coordinated by WHC Business Planning and Integration.

3.2 ANNUAL HANFORD SITE ENVIRONMENTAL REPORT

PNL prepares an annual Hanford Site Environmental Report summarizing the environmental compliance status and environmental effluent and emission data collected during the year (PNL 1993). Preparation of the report is coordinated by PNL's Office of Health and Environment, under the guidance of the QSH division. The report covers the previous CY and meets the requirements of DOE Orders 5400.1 (DOE 1988a) and 5484.1 (DOE 1981). The report is issued each year on June 1.

The PNL (1993) document summarizes data on Hanford Site effluents and emissions, contaminant levels in the surface environment on and around the Site, and in the groundwater and provides an assessment of the compliance of Hanford Site operations to applicable environmental protection regulations. The document also includes an assessment of the

radiological dose to both a hypothetical maximally exposed individual and the local population. The report uses effluent monitoring data provided by WHC and PNL from routine monitoring of their operations for air and liquid effluents and for solid waste generation and disposal. Unusual or significant unplanned releases of hazardous materials or pollutants resulting in environmental occurrences are reported. Results of the environmental surveillance activities conducted by PNL to monitor the environs on and off the Site are reported. (See Section 5.1 for information on effluent monitoring, Section 5.2 for information on environmental surveillance activities, and Section 5.3.4 for additional information on the environmental report.)

3.2.1 Westinghouse Hanford Company Annual Reports

The EEM group prepares an annual report on air emissions and liquid effluents released to the environment during the calendar year from facilities managed by WHC. PNL contributes information to the report from some of the 300 Area facilities. This report fulfills the annual environmental release reporting requirements of DOE Orders 5400.1 and 5484.1.

3.3 OFFICE OF MANAGEMENT AND BUDGET CIRCULAR A-106 SUBMITTAL TO DOE-HQ

Executive Order 12088, *Federal Compliance with Pollution Control Standards* (Carter 1978), as amended by Executive Order 12580 (Reagan 1987), requires that each executive agency submit to the director of the OMB, through the administrator of EPA, an annual plan for controlling environmental pollution. The plan will define improvements necessary

in the design, construction, management, operation, and maintenance of federal facilities and activities and will include annual cost estimates. The plan covers the preceding 2 years, the current reporting year, and 4 future years for pollution abatement projects.

The plan for DOE facilities is prepared by HQ from information supplied by the operations offices. The projects defined by these submittals make up the Federal Agency Pollution Abatement Plan. The Hanford Site data are supplied on computer disk to HQ with a hard copy, as requested. A separate site plan is not prepared.

Information from all DOE operations offices is incorporated into the HQ Federal Agency Pollution Abatement Plan. For the Hanford Site, the A-106 projects (OMB 1974) are cross-referenced to the activity data sheets that support the site-specific plan.

The responsibility to coordinate and review the preparation of information to HQ for the Hanford Site is assigned to the Office of EAP's Regulatory Policy, Planning, and Analysis Branch (RPA). Review and concurrence are provided by ERD's Environmental Remediation Branch (ERB) and the Plans and Budget Division (PBD) program's Budget Branch. Preparation is coordinated by WHC Business Planning and Integration. The data are prepared in accordance with guidance and a schedule from EH-22.

This page intentionally left blank.

4.0 SPECIAL PROGRAMS AND PLANS

Planning documentation is required by DOE Order 5400.1 (DOE 1988a) for special types of programs; for example:

- A groundwater protection management program
- A waste minimization program
- A pollution prevention awareness program.

RL has met the requirement for a groundwater protection management program by preparing a new plan incorporating elements contained in DOE Order 5400.1, as well as elements contained in other HQ directives.

DOE Order 5400.1 guidance allows combining the waste minimization and pollution prevention awareness programs and plans. RL has combined these for the Hanford Site.

4.1 GROUNDWATER PROTECTION MANAGEMENT PROGRAM

The RL program for groundwater protection management is detailed in the *Hanford Site Groundwater Protection Management Program* (DOE-RL 1989c) issued May 9, 1990. The responsibility for coordinating and reviewing preparation of this plan, annual review, and update every 3 years is assigned to WMD's RCRA and Operational Monitoring Program. The plan is prepared by WHC's Geosciences Function. The next update will be available in the next revision of the EPIP.

The groundwater protection management program is supported by four major areas of operational planning documentation (see Exhibit 1-1). The operational groundwater monitoring plan, RCRA

groundwater monitoring project plans, and CERCLA and RCRA corrective action work plans are existing or ongoing plans. The characterization and technology development plans cover additional studies needed to comply with specific program element requirements contained in Chapter III of DOE Order 5400.1.

The requirement for a groundwater monitoring plan is fulfilled through a groundwater program sitewide surveillance plan prepared by PNL. This plan is summarized in the *Hanford Site Groundwater Protection Management Program*. Currently more than 700 monitoring wells on the Hanford Site are sampled to monitor the effects to groundwater from all Hanford Site waste management activities, current operations, surplus facilities, and past practices. More than 350 new RCRA-compliant monitoring wells have been installed since 1986 to comply with CERCLA, RCRA, and Ecology's groundwater protection requirements. Groundwater monitoring networks for other facilities have been prioritized and scheduled in a comprehensive plan for meeting future RCRA permitting and CERCLA remedial action needs.

4.2 LIQUID EFFLUENTS MANAGEMENT PROGRAM

The basic groundwater protection strategy for the Hanford Site involves both near- and long-term actions. Near-term actions for groundwater protection include eliminating disposal of contaminated effluent to the soil column. Effluents (e.g., cooling water streams) that are not contaminated will continue to be disposed of to the soil column. There are 19 Phase I and 14 Phase II liquid effluent

streams. All Phase I and five Phase II streams will receive the BAT/all known, available, and reasonable methods of treatment (AKART) (i.e., BAT/AKART will be implemented) by June 1995. The BAT/AKART for the other nine Phase II streams will be implemented by October 1997. Continuing liquid effluent discharges or wastewater discharges from site operations will be permitted in accordance with a consent order under *Washington Administrative Code* (WAC) 173-216 (or WAC 173-218 if applicable) except for discharges exempt from permitting pursuant to the CERCLA. Long-term groundwater protection will be accomplished by removal, stabilization, and/or treatment of stored wastes and wastes released to the ground. Engineered barriers will be used to restrict infiltration over disposal sites.

4.3 WASTE MINIMIZATION AND POLLUTION PREVENTION AWARENESS PROGRAM

At the Hanford Site, the waste minimization and pollution prevention awareness programs have been integrated into a single, coordinated program. The EAP's RPA Branch is responsible for coordinating this program. RL has developed an Environmental Protection Policy statement that supports waste minimization and pollution prevention awareness activities (see Exhibit 1-9). Waste minimization goals and milestones are included in performance evaluations of operating contractors. The accomplishment of waste minimization goals and milestones is included in evaluating performance to determine award fees.

The program planning documentation comprises multiple-tier plans. First, the *Hanford Site Waste Minimization and Pollution Prevention Awareness*

Program Plan, DOE/RL-91-31 (DOE-RL 1991f), was developed to outline and focus this program for the RL prime contractors. Second, each of the prime contractors has prepared a plan for establishing and implementing their respective waste minimization and pollution prevention awareness programs. PNL and KEH have a plan for implementation. The managers of specific facilities or organizations that generate waste are responsible for developing and implementing plans for minimizing waste and promoting pollution prevention awareness in their respective areas.

The *Hanford Site Waste Minimization and Pollution Prevention Awareness Program Plan* (DOE-RL 1991f) and the Hanford Site prime contractors' plans have been prepared. The plans address the following elements, as appropriate to mission and needs, to effectively implement waste minimization activities:

- Top management support
- Employee training, awareness, and incentives
- Program scope, objectives, and goals
- Accurate cost accounting
- Process waste assessments
- Waste minimization techniques
- Technology transfer
- Tracking and reporting systems
- QA
- Program evaluation.

Waste minimization teams have been established at waste generating facilities to coordinate waste minimization activities.

Wastestream identification and characterization have been completed at a number of facilities; this effort is continuing at others. RL has established site goals for specific waste categories through CY 1995. Each contractor will annually establish its own goals to meet or exceed those established for the site. General and/or specific employee training in waste minimization is being conducted.

Current and planned activities for waste minimization and pollution prevention awareness are described below.

- The *Hanford Site Waste Minimization and Pollution Prevention Awareness Program Plan* will be reviewed annually and updated at least every 3 years. This document and the WHC MRP 5.44 (WHC-CM-1-3) are currently being revised by the WHC Pollution Prevention Program.
- The process of wastestream identification and characterization is continuing at those facilities that have not completed this task.
- Waste minimization goals have been established through CY 1995.
- The ongoing effort by the contractors to issue semiannual waste minimization status reports will continue.
- The waste minimization potential of all waste will continue to be evaluated by each facility to identify additional reductions in total waste generated.
- A method will be developed to measure waste minimization by comparing quantity and toxicity.
- Baseline techniques will be developed along with methods for monitoring results.
- The cost accounting system will be reviewed to determine more efficient ways to accurately reflect life-cycle waste costs.
- Waste accounting will be improved with the implementation of computer tracking systems. The use of bar coding will also be evaluated for cradle-to-grave waste tracking.
- An annual waste reduction report will be provided to HQ for CY accomplishments on source reduction, recycling, and treatment.
- A biennial report will be provided to Ecology and EPA on waste minimization accomplishments.

This page intentionally left blank.

5.0 ENVIRONMENTAL MONITORING PROGRAMS

DOE Order 5400.1, *General Environmental Protection Program* (DOE 1988a), requires DOE sites to prepare an EMP by November 9, 1991. *Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance* (DOE 1991f), provides additional guidance and requires implementation of the EMP. Tri-Party Agreement Milestone M-17-12 also requires sampling and analysis plans. The EMP identifies and discusses two major activities: (1) effluent monitoring and (2) environmental surveillance. According to the guidance, each DOE site, facility, or activity that uses, generates, releases, or manages significant quantities of hazardous materials shall provide a written EMP. All constituents of concern, both radioactive and nonradioactive, shall be sampled, monitored, analyzed, and reported.

The effluent monitoring section of the EMP consists of FEMP abstracts and a description of the Operational (near-facility) Environmental Monitoring Program. The environmental surveillance plan was prepared by PNL, which has responsibility for Hanford Site environmental surveillance, which is monitored by the Site Environmental Surveillance Program. The environmental surveillance plan addresses sitewide and offsite environmental surveillance.

Each of the primary contractors prepared FEMPs for their facilities that meet the requirement criteria. It should be noted that substantial budget commitments are needed for the successful implementation of the FEMPs. RL will continue to work with HQ to ensure continued progress toward full implementation of the FEMPs within 3 years. Exhibit 5-1 identifies Hanford Site

environmental monitoring responsibilities.

This section also addresses the means for meeting the requirements for the management and maintenance of monitoring data for the environmental monitoring programs. These include the manner by which unplanned releases and other environmental occurrences are detected and reported and how compliance to applicable requirements is demonstrated.

5.1 EFFLUENT MONITORING

WHC is responsible for effluent and related operational environmental monitoring activities, except for some research and development and other facilities operated solely by PNL or HEHF. As stated in Section 1.1.2, each contractor monitors its own facilities' effluents when required to ensure safe and environmentally sound operations.

WHC's responsibilities include monitoring of operational, waste management, and surplus facilities and monitoring near-facility environmental media to control operations. Through these effluent monitoring activities, WHC quantifies and documents the amounts of radioactive and nonradioactive gases and liquids released or disposed of to the environment from operations. These data are used to assess compliance with applicable Federal, State, and local regulations and permits.

The monitoring results also are used in pollution abatement and waste minimization programs to assess the effectiveness of effluent treatment and control and waste reduction efforts.

Exhibit 5-1. Environmental Monitoring Responsibilities.

Activity	PNL	WHC	HEHF	KEH
FEMP determination	Yes	Yes	Yes	Yes
FEMP required (number)	Yes (4)	Yes (15)	No	No
Operational Environmental Monitoring Program	Yes (300/400 Airborne Areas, PNL-MA-8)	Yes WHC-CM-7-4 WHC-CM-7-5	No	No
Near-facility environmental monitoring	No	Yes		
Site Environmental Surveillance Program	Yes (EMP)	No	No	No

5.1.1 Effluent Monitoring Plans

The facility-based Operational Environmental Monitoring Program (OEMP) indicates the adequacy of process effluent controls or stabilization efforts in the immediate vicinity of a specific facility or waste site. The program focuses on facilities in the 100, 200/600, and 300/400 Areas. The program monitors air, surface water, groundwater, soil, sediment, and biota at, or contiguous to, operations areas.

The OEMP, which covers both surface and groundwater monitoring, contains or references the extent and frequency of monitoring and measurements, QA requirements, and program implementation procedures.

The EMP describes OEMP activities, the rationale and design criteria for the OEMP, extent and frequency of monitoring and measurements, procedures for laboratory analyses, QA requirements, and program implementation procedures.

A guidance document (WHC 1992a) prepared by WHC's Regulatory Support function defines the requirements for facility-specific effluent monitoring plans. This guidance document addresses requirements contained in the DOE document (1991b).

The FEMP determination evaluations were prepared by each of RL's primary contractors: WHC, PNL, HEHF, and KEH. HEHF and KEH evaluations determined that no FEMPs were needed for their facilities. Fifteen of the 138 WHC facilities evaluated require FEMPs. Some will require monitoring system upgrades. PNL determined that 4 of the facilities they operate/manage require a FEMP (PNL 1991a-d).

The FEMPs contain the detailed rationale and design criteria for the effluent monitoring program, extent and frequency of monitoring and measurements, procedures for laboratory analyses, requirements, and program implementation procedures.

The FEMP documentation process for WHC incorporates the following documents: *Management Plan for Facility Effluent Monitoring Plan Activities* (WHC 1991a), *Quality Assurance Project Plan for Facility Effluent Monitoring Plan Activities* (WHC 1992b), and *Unit Dose Calculation Methods and Summary of Facility Effluent Monitoring Plan Determinations* (WHC 1991b).

An update of the FEMP is required whenever a new process or operation introduces new hazardous materials or significant radioactive materials. The FEMP shall be reviewed annually even if there are no operational changes, and it must be updated at least every 3 years.

5.1.2 Radioactive Sample Collection and Analysis

Sampling of air (gaseous and particulate) and liquid effluents is conducted at most facilities through programs designed to obtain and report reliable data and determine compliance with administrative control limits. These administrative control limits are established to ensure that regulatory and permitted limits will not be exceeded. For discharges to the atmosphere, continuous air monitors collect particulates on a filter monitored continuously by a radiation detector. The monitors serve as warning devices to alert personnel to releases that exceed normal operating parameters for radioactive emissions. Tritium, argon, and iodine are monitored onsite. These gases are measured by

using the collection media appropriate for the gas. Representative samples to determine amounts of radioactive discharges are obtained through record samplers that collect particulates on a filter. The filters are exchanged and evaluated by laboratory analysis for gross alpha and gross beta activity at least weekly. PNL facilities exchange their filters biweekly. The record samplers indicate the amounts and concentrations of radioactive particulates being discharged.

Liquid sample schemes are designed to provide representative samples of the effluent stream. Methods include weekly grab samples, batch sampling from a retention area, incremental time-proportional sampling, incremental flow-proportional sampling, and continuous flow-proportional sampling. Liquid samples are collected for 1 month, composited, and then analyzed for gross beta and gross alpha radioactivity, as well as for specific nonradioactive parameters. Specific radionuclide analyses are performed on monthly composites that contain gross alpha or gross beta concentrations greater than predetermined limits.

Because the Hanford Site has 33 separate liquid effluent discharges, the Tri-Party Agreement (Ecology et al. 1992) has established milestones as part of the Liquid Effluent Study program of compliance plans for liquid discharges to land that would infiltrate to groundwater (Ecology et al. 1990). Sampling and analysis plans (SAP) are required for each Hanford Site liquid effluent stream. A SAP describes the sampling, analysis, and related activities required under the Tri-Party Agreement and must be approved by the regulators before being implemented and before being revised.

Data obtained from the effluent monitoring activities are reviewed continuously for consistency and errors. Effluent concentration values are calculated weekly, monthly, and quarterly. These are correlated with facility operations and compared with past data and effluent release guides. All anomalies are investigated to detect and correct errors and to ensure data accuracy.

5.2 ENVIRONMENTAL SURVEILLANCE

The PNL Site Environmental Surveillance Program (SESP) assesses onsite and offsite environmental impacts and offsite human health exposures. The program monitors air, surface water and groundwater, soil, sediment, vegetation, food products, wildlife, and radiation exposure. Onsite PNL surveillance serves to evaluate effects on the environment and the effectiveness of facility effluent controls.

The *Environmental Monitoring Plan* (DOE-RL 1991c) describes SESP activities, as well as the rationale and design criteria for the SESP, extent and frequency of monitoring and measurements, procedures for laboratory analyses, QA requirements, and program implementation procedures.

The *Environmental Monitoring Plan* includes groundwater monitoring and the meteorology and climatology program. The groundwater portion of the plan describes the groundwater monitoring program's design, the location of wells, sampling frequency and procedures, analyses performed, and data analysis. It also provides the rationale for the level of effort devoted to these elements. The rationale and design of the meteorology and climatology program includes the number and location of stations, instrumentation, forecasting

capability, data management, diffusion modeling, and emergency response capability.

An annual report describing the environmental status of the Hanford Site and the surrounding area is prepared and distributed in accordance with DOE Order 5400.1 (DOE 1988a) and applicable HQ guidance. This report summarizes key environmental data collected through the PNL SESP and FEMP program and the WHC OEMP and Effluent Emissions Monitoring Program and also evaluates the Hanford Site compliance with applicable environmental standards and regulations.

5.3 MANAGEMENT OF MONITORING DATA

5.3.1 Detection and Reporting of Unplanned Releases

Effluent limits and guidelines have been established for the discharge of airborne and liquid wastes from operations conducted at the Hanford Site. The limits for effluents with radioactive constituents are based on the application of the as-low-as-reasonably-achievable principle, the prevention of an offsite dose exceeding the limits specified in DOE orders, the "National Emission Standards for Hazardous Air Pollutants" (40 CFR 61), Washington State Department of Health (WDOH) regulations (WAC 246-247, WAC 173-480), and past monitoring data. Nonradioactive constituents in airborne and liquid effluents are regulated to prescribed requirements as required by Federal, State, and local regulations which include, but are not limited to, the following: RCRA, CERCLA, *Clean Air Act of 1977*, *Clean Water Act of 1977*, and "Dangerous Waste Regulations" (WAC 173-303). Release limits and

guidelines have been established, as necessary, to meet these regulatory requirements, Federal, State, or local permits, DOE and RL orders, and RL contractor administrative limits.

When operational releases exceed these established criteria, notification is given to DOE-HQ and to appropriate response and regulatory agencies by the site contractors. Reporting to the National Response Center is required under the CERCLA statute when the released or spilled material exceeds the reportable quantities listed in *Designation, Reportable Quantities, and Notification*, 40 CFR 302.4, Table 302.4 (EPA 1989b). Violations of NPDES permit limits are reported to the EPA and Ecology.

5.3.2 Permitted Releases

A NPDES permit for the Hanford Site, No. WA-000374-3, governs discharges to the Columbia River. This permit is required by the *Clean Water Act of 1977*, as amended. The permit was issued December 7, 1981, expired December 31, 1985, and is presently being renegotiated. Because RL submitted an application for renewal of the NPDES permit by the required submittal date of June 30, 1985, conditions of the permit issued in 1981 are in effect until EPA issues a revised permit. The permit specifies discharge points (of which there are eight), effluent limitations, and monitoring requirements. Effluent limits are monitored by a routine sampling and analysis program for each of the eight discharges. Normal and any off-limit conditions are reported to EPA Region 10 and Ecology.

The WDOH, Division of Radiation Protection, has issued a Radioactive Source Registration permit, No. FF-01, to RL for limited radioactive air emissions from

Hanford Site operations. This permit is required by "Radiation Protection-Air Emissions" (WAC 246-247). The permit covers two years of operations beginning August 15, 1991. The permit has been revised and was submitted to WDOH on August 31, 1993. Each stack with the potential to emit significant airborne radioactivity (i.e., measurable) is monitored to ensure compliance to effluent limitations. Near-field and offsite air sampling stations also are operated to detect any trends toward elevated radioactive releases from stacks as well as from ground sources. Any change in facility operations that could result in airborne radionuclide emissions having measurable offsite dose effects must be reported immediately.

The Prevention of Significant Deterioration permit, No. PSD-X80-14, provides specific limits for oxides-of-nitrogen emissions from the Plutonium-Uranium Extraction Plant or Uranium-Oxide Plant. The permit is required by the *Clean Air Act of 1977*, as amended. The permit was issued by EPA Region 10 to RL on September 30, 1980, and continues in force. The permit requires that any excess emissions be reported to the Benton-Franklin-Walla Walla Counties Air Pollution Control Authority, with copies to the EPA and Ecology, within 10 working days. Continuous monitoring of all exhaust stacks with a potential for significant oxides-of-nitrogen release detects any excess emissions. Any other releases to air that exceed the limits of nonradioactive pollutants regulated by the Benton-Franklin-Walla Walla Counties Air Pollution Control Authority are to be reported to the Authority within 1 working day.

5.3.3 Effluent Discharge Reporting

The requirement for RL to report radioactive effluent and onsite discharge data to the Idaho National Engineering Laboratory is met by submitting the Effluent Information System/Onsite Discharge Information System report in April of each year (see Section 2.5). Annual effluent discharge release reports are generated for each major operating area. Data are compiled from submittal by both WHC and PNL for effluent releases from their facilities with this activity sponsored by the RCRA and Operational Monitoring Program. WHC transmits these data electronically with a transmittal memo from RL to DOE-Idaho. Reporting for nonradioactive constituent releases are consistent with the requirements of the applicable Federal, State, and local regulations and permits.

5.3.4 Annual Hanford Site Environmental Report

Summary data from both the PNL SESP and WHC OEMP programs, and other relevant programs and projects, are compiled in an annual Hanford Site environmental report (see Section 3.2). A principal purpose of the report is to provide an assessment of the impact that Hanford Site operations have on the environment and on the public. In so doing, the report provides descriptive information on the major environmental sampling programs and discusses the status of Hanford Site facilities and operations relative to compliance with various environmental regulations. More detailed data compilations for both the effluent monitoring program and the environmental surveillance program are provided annually by either WHC or PNL, in other reports (PNL 1993, WHC 1993). These detailed reports, and the annual Hanford Site environmental report,

are made available to organizations and individuals that request them. Copies are also available for review in the RL Public Reading Room, Washington State University at the Tri-Cities.

5.3.5 INTERNATIONAL ENVIRONMENTAL INSTITUTE

The International Environmental Institute (IEI) was established in March 1992 by WHC as an environmental resource center staffed by approximately 300 people to enhance the communication, development, application, and commercialization of environmental remediation technologies, training, and expertise. The goal of the IEI is to increase the value of the federal investment in the Hanford Site environmental cleanup mission through improved information exchange and business interactions with external entities. The IEI also acts as a conveyor, or "two-way window", between the Site and the outside world to assess environmental technologies throughout the world for potential application at Hanford. The IEI is developing new ways of utilizing the Site's assets and getting the private sector involved. Because of these activities, the IEI is a key component of RL's new Office of Economic Transition, with responsibility to support diversification and long-term stability of the region's economy. The IEI has conducted several international exchanges as part of developing new ways to do business with external entities.

This page intentionally left blank.

6.0 QUALITY ASSURANCE AND DATA VERIFICATION

RL is instituting programs for its environmental protection initiatives to ensure accurate and reliable data. These programs are implemented by the RL contractors to address their activities regarding environmental protection.

As directed by DOE Order 5400.1 (DOE 1988a), the programs will consider the following elements: QA program, laboratory certification, the DOE interlaboratory QA program for radioactive material, and independent data verification. The matrix chart in Exhibit 6-1 shows the manner by which each RL primary contractor has or will implement actions within its program to address these elements. As these elements are applicable to RL and its contractors, they are discussed in this section.

engineer, hydrogeologist, or other expert with experience and expertise in hazardous waste management and site investigation, cleanup, and monitoring.

All sample collection and analysis activities will be performed in accordance with approved EPA methods for QA, quality control (QC), and chain of custody. These methods are defined in *Interim Guidance and Specifications for Preparing Quality Assurance Project Plans* (EPA 1983), *Data Quality Objectives for Remedial Response Activities-Development Process* (EPA 1987a), "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (EPA 1986), and subsequent amendments to these guidelines. These requirements are incumbent on the parties to the Tri-Party Agreement.

6.1 QUALITY ASSURANCE PROGRAMS

The Hanford Site QA programs of WHC, PNL, and KEH are to meet the requirements of DOE Order 5700.6C (DOE 1991d). Full implementation of DOE Order 5700.6C at the Hanford Site is expected to take a year. Hanford Site contractors have developed implementation plans and schedules. Activities to achieve full implementation are still proceeding at the time of this publication.

QA requirements are stipulated in the Tri-Party Agreement (Ecology et al. 1992) for direction and supervision of response work, and for sample collection, transportation, and analysis. All response work will be under the direction and supervision, or in consultation with, a qualified

6.1.1 Westinghouse Hanford Company

WHC is responsible to protect the environment and comply with environmental regulations while performing its activities, including controlling and monitoring releases to the environment by its facilities. These responsibilities are implemented through its operating divisions and the Restoration and Remediation Division. WHC is currently revising its QA program to incorporate the environmental requirements of DOE Order 5400.1 (DOE 1988a), DOE Order 5700.6C, and the Tri-Party Agreement.

**Exhibit 6-1. Compliance Matrix for U.S. Department of Energy Order 5400.1
Quality Assurance Requirements.**

Requirement ^a	Compliance document			
	WHC	PNL	KEH	HEHF
Quality assurance	<i>Quality Assurance Manual</i> (WHC 1990d) DOE/RL-90-28 Rev 1 (DOE/RL 1991g)	PNL-MA-70 (PNL 1991e) DOE/RL-90-28 Rev 1 (DOE-RL 1991g) DOE 5700.6C	KAP 1.0-18.0 ^b DOE/RL-90-28 Rev 1 (DOE/RL 1991g)	HEHF-78 ^c DOE/RL-90-28 Rev 1 (DOE-RL 1991g) DOE 5700.6C
Compliance Assurance	5700.6C, 5482.1B QA Manual 4-2 WHC-CM-7-5 (HEMP) Hanford Site Environmental Plan	HEMP PNL-MA-70 PNL-MA-8	HEMP KAP 1.0-18.0	HEMP HEHF-78 ^c
Laboratory certification	Ecology accreditation (when required)	Ecology accreditation (when required)	N/A	Ecology accreditation (when required)
DOE laboratory for radioactive materials	Described herein, Section 6.3.1	Described herein, Section 6.3.2	N/A	N/A
Independent data verification	<ul style="list-style-type: none"> • Tri-Party Agreement grants • Environmental monitoring grant 	<ul style="list-style-type: none"> • Tri-Party Agreement grants • Environmental monitoring grant 	N/A	<ul style="list-style-type: none"> • Tri-Party Agreement grants

^aThese four categories represent the salient features cited in DOE Order 5400.1, Chapter IV, Paragraph 10.a.

^bAvailable from KEH.

^cIn development.

WHC = Westinghouse Hanford Company.

PNL = Pacific Northwest Laboratory.

KEH = Kaiser Engineers Hanford Company.

HEHF = Hanford Environmental Health Foundation.

KAP = Kaiser Administrative Procedure.

N/A = Not applicable.

The WHC QA program and QA management plan (WHC 1992c) implements applicable, relevant, and appropriate QA requirements within WHC for performing work to implement DOE Order 5400.1, DOE Order 5700.6C, and Tri-Party Agreement QA requirements. The Tri-Party Agreement contains the following EPA guidance documents: QAMS-005/80 (EPA 1983), QAMS-004/80 (EPA 1980), EPA SW-846 (EPA 1986), and EPA/1540/G-87-003 and 004 (EPA 1987a). The program also addresses additional quality requirements from other regulatory agencies that are applicable.

The WHC QA program requires that a QA program plan be developed by each implementing organization who perform sampling and analysis activities. The QA program plan covers Tri-Party Agreement or other environmental requirements. This plan specifies how organizational sampling and analysis activities are controlled and identifies applicable procedures for these efforts. The plan requires that individual documents be identified for sampling events (i.e., quality assurance project plans [QAPjPs] and SAPs). These documents are designed to ensure that data collected meet the requirements and objectives of the sampling event.

This combination of documents implements the regulatory QA requirements, specifies how organizations execute the QA program requirements, and identifies the specifics required for each sampling and analysis activity (QAPjPs, SAPs).

The WHC analytical laboratories have a documented QA program in place that meets DOE Order 5400.1 and Tri-Party Agreement requirements. The laboratory QA plans are prepared in accordance with the statement of work that

contains the EPA data quality objective guidance for remedial response activities and requirements for preparing QA plans. Other QA plans for specific projects are currently in use or are being prepared to fulfill specific RCRA and CERCLA requirements.

6.1.2 Pacific Northwest Laboratory

The PNL QA program (PNL-MA-70) is based on American Society of Mechanical Engineers (ASME) *Quality Assurance Requirements for Nuclear Facilities*, NQA-1-C-19856 (ANSI/ASME 1989), and meets the majority of the requirements of DOE Order 5700.6C. Further enhancements to the program with special emphasis on the use of Continuous Improvement (CI) processes are in progress. PNL's plan to implement the requirements of DOE Order 5700.6C was submitted to RL in April 1992. The approach is to incorporate the principles of the DOE order into PNL's quality management initiatives. The program also is designed to address the applicable requirements and regulations, such as those contained in DOE Order 5400.1 (DOE 1988a) and EPA/520/1-87-028 (EPA 1987b). These requirements and regulations will be addressed through a project-specific QA plan when appropriate. The responsibility for implementing this program for the environmental surveillance activities is assigned to the Director for Environmental Restoration and Waste Management.

PNL is responsible for the environmental surveillance activities described in Section 5.2 of this plan and for administering the Hanford Site analytical support services contract. The QA requirements for each project are addressed in a project-specific QA plan or the project management plan. The requirements contained in these

documents are designed to ensure that data collected meet the requirements and objectives of the respective projects.

PNL has prepared a QA project plan to meet the EPA's requirements for analytical activities in the Materials and Chemical Sciences Center in support of the Tri-Party Agreement. This QA plan has been prepared according to the *Data Quality Objectives for Remedial Response Activities-Development Process* and the *Interim Guidance and Specifications for Preparing Quality Assurance Project Plans*.

6.1.3 Hanford Environmental Health Foundation

The QA program for HEHF's Industrial Health Division, including the laboratory, is based on DOE Order 5700.6C and the QA/QC criteria of its laboratory's accreditation and certifications. Project plans are written to identify the QA requirements for each component of Industrial Health's program (e.g., Industrial Health analysis, Industrial Health field services, drinking water analysis). The HEHF's analytical work is part of the work health program at the Hanford Site, not the environmental remediation effort; therefore, QA requirements of the Tri-Party Agreement concerning environmental sampling and analysis do not apply to HEHF's laboratory work.

6.1.4 Kaiser Engineers Hanford Company

KEH has established and implemented a DOE-approved QA program based on DOE Order 5700.6C (DOE 1991) that also complies with NQA-1 (ANSI/ASME 1989). The written portion of the Quality Management

Program is found in the KEH Quality Program Manual (KEH 1993). This program is applied to all work performed by KEH. With consolidation of the contractors, KEH may integrate their QA program with the WHC program.

Planning is based on a graded approach that determines the extent of control and verification. The intent is that QA requirements are imposed consistent with the consequences of failure of the structure, system, and component under consideration.

Line management is responsible and accountable for preparing and effectively implementing procedures that meet and execute the requirements of the QA program. The managers are also responsible for regularly assessing the adequacy of the portion of the program for which they are responsible.

The Performance Assurance organization is responsible for review and approval of instructions and procedures to ensure that they meet all applicable QA program requirements.

The Independent Assessment organization is responsible for verifying, through the surveillance and auditing process, that the QA program is effectively implemented by all KEH organizations.

6.2 LABORATORY CERTIFICATION

An analytical laboratory accreditation program is being established by Ecology. Federal laboratories may participate at no cost. Accreditation will be based on a management systems audit by Ecology personnel and on

satisfactory performance of EPA and internal control or working standards.

6.2.1 Westinghouse Hanford Company

As part of the laboratory upgrade program, the WHC laboratories will participate in the Ecology accreditation program. This participation will substantiate fulfillment of requirements for showing credibility of analytical results produced. Accreditation of the WHC laboratories will be requested when developed capabilities and demonstrated performance meet the program's criteria.

To fulfill supplemental capability and capacity needs in performing analyses that support activities conducted in response to the action plan for the Tri-Party Agreement (Ecology et al. 1992), WHC is using contracted offsite laboratory facilities. When this is done, the laboratories are bound, by contract, to adhere to the QA requirements of Article 30 of the Tri-Party Agreement.

6.2.2 Pacific Northwest Laboratory

PNL is participating in the Laboratory Accreditation program initiated by Ecology in July 1989. The first PNL participant in the accreditation program is the Analytical Chemistry Laboratory (ACL), which already actively participates in two EPA laboratory programs (Contract Laboratory Program and Water Pollution Studies) that Ecology has listed as suitable sources of evidence of satisfactory laboratory performance. The ACL is now fully accredited by Ecology for two techniques for analyzing water and sediment. Concurrently, PNL is continuing its activities in support

of Hanford Site programs, in compliance with performance requirements stated in the Tri-Party Agreement and associated analytical laboratory programs.

The ACL participates in the performance evaluation study of the EPA's Contract Laboratory Program and also is a long-time participant in the interlaboratory program for the EPA's Water Pollution Studies including both inorganic and organic samples.

6.2.3 Hanford Environmental Health Foundation

Although the HEHF Industrial Health Laboratory is not currently involved with environmental analyses, it is still accredited by Ecology for NPDES analyses. The laboratory also maintains a number of key certifications and accreditation for its occupational health-related work. These include full IH accreditation from the American Industrial Hygiene Association (AIHA), chemical and biological drinking water certification from WDOH, and bulk asbestos accreditation from the National Institute of Standards and Technology (NIST). Each of these accreditation programs includes an interlaboratory proficiency and performance evaluation program. These are the AIHA Proficiency Analytical Testing (PAT) program, EPA's Water Supply Performance Evaluation Program (WS Samples) and the NIST bulk asbestos proficiency evaluation program.

6.3 THE U.S. DEPARTMENT OF ENERGY LABORATORY QUALITY ASSURANCE PROGRAM FOR RADIOACTIVE MATERIAL

6.3.1 Westinghouse Hanford Company

WHC has participated in the standards program with the DOE-New York Operations Environmental Measurements Laboratory for several years. The principal function of the WHC laboratory has been analysis of highly radioactive samples. Analysis methods suggested by the Environmental Measurements Laboratory are not in place in the WHC laboratory in all cases. Also, the analyses frequently do not apply to the work done by the WHC laboratory (e.g., analyzing for strontium in milk and bone).

When the proposed Waste Sampling and Characterization Laboratory becomes operational, as part of the laboratory upgrade program, the scope and background/detection level of radionuclides will be consistent with the Environmental Measurements Laboratory standards. This facility is scheduled to be operational in 1994. This laboratory's charter will include the measurement of radionuclide concentrations in water and air in compliance with the *Safe Drinking Water Act of 1974* and the *Clean Air Act of 1977*, as well as soils. This laboratory is not expected to analyze significant numbers of biological samples.

6.3.2 Pacific Northwest Laboratory

PNL continues to participate routinely in the Quality Assessment Program conducted by the Environmental Measurements Laboratory. For several years, PNL has submitted test sample data at regular intervals for several radioisotopes in water and soil.

The PNL will continue to actively participate in this program. In addition to the above matrix types, PNL will consider adding vegetation and tissue analysis, and analyses of air filter samples when available from the Environmental Measurements Laboratory, if the laboratory's analytical responsibilities include that sample form. A more systematic data documentation and performance tracking system is currently under way to permit regular QC data evaluation and instigation of corrective laboratory actions, if needed.

The PNL conducts the site environmental surveillance program, as described in Section 5.2. Samples for that program are analyzed by a subcontractor laboratory that is required to participate in the DOE Quality Assessment Program.

6.4 INDEPENDENT DATA VERIFICATION

In accordance with DOE Order 5400.1 (Chapter IV, Paragraph 10.d) (DOE 1988a), EH-1, in consultation with Program Secretarial Officers and field organizations, established an independent data verification program as part of the order's environmental monitoring program. On August 21, 1989, the Secretary of Energy, as part of his 10-point initiative of June 27, announced a comprehensive program to enter into agreements with 11 states "...to provide direct access and enhance environmental monitoring by the states at the department's facilities." The Secretary's initiative satisfies DOE Order 5400.1 requirements for independent data verification.

The RL has funded two programs for oversight of the Hanford Site's environmental and waste management and cleanup. For environmental

oversight of RCRA and CERCLA activities at the Hanford Site, the first program includes technical analysis, work to be performed under the Tri-Party Agreement (Ecology et al. 1992), and data-sharing on air, soil, vegetation, wildlife, fish, foodstuffs, ambient radiation, and water sampling in the environs of the Hanford Site. This program is administered by Ecology.

In March 1990, WDOH was awarded a to conduct independent oversight and data verification of environmental surveillance activities at the Hanford Site. The grant provides funds for sample collection, analysis, data compilation and interpretation, and report preparation. WDOH provides the results of their independent data verification and oversight activities to RL annually.

This page intentionally left blank.

7.0 REFERENCES

- 10 CFR 1021, "Compliance with the National Environmental Policy Act," Title 10, *Code of Federal Regulations*, Part 1021, as amended.
- 40 CFR 61, "National Emission Standards for Hazardous Air Pollutants," Title 40, *Code of Federal Regulations*, Part 61, Subpart H, as amended.
- 40 CFR 302, "Designation, Reportable Quantities, and Notification," Title 40, *Code of Federal Regulations*, Part 302, as amended.
- 40 CFR 1500-1508, "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act," Title 40, *Code of Federal Regulations*, Parts 1500-1508, as amended.
- 57 FR 15122, 1992, "National Environmental Policy Act Implementing Procedures-Final Rule," (revises 10 CFR 1021), *Federal Register*, Vol. 57, p. 15122.
- ANSI/ASME, 1989, *Quality Assurance Requirements for Nuclear Facilities*, NQA-1-C-19856, American National Standards Institute and American Society of Mechanical Engineers, New York, New York.
- Carter, J. E., 1978, *Federal Compliance with Pollution Control Standards*, Executive Order 12088, Office of the President of the United States, Washington, D.C.
- Clean Air Act of 1977*, as amended, 41 U.S.C. 7401.
- Clean Water Act of 1977*, as amended, 33 U.S.C. 1251.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, as amended, 42 U.S.C. 9601 et seq.
- DOE, 1981, *Environmental Protection, Safety, and Health Protection Information Reporting Requirements*, DOE Order 5484.1, U.S. Department of Energy, Washington, D.C.
- DOE, 1986, *Environment, Safety, Health, and Health Appraisal Program*, DOE Order 5482.1B, U.S. Department of Energy, Washington, D.C.
- DOE, 1988a, *General Environmental Protection Program*, DOE Order 5400.1, U.S. Department of Energy, Washington, D.C.
- DOE, 1988b, *Radioactive Waste Management*, DOE Order 5820.2A, U.S. Department of Energy, Washington D.C.
- DOE, 1989, *Environmental Compliance Issue Coordination*, DOE Order 5400.2A, U.S. Department of Energy, Washington, D.C.
- DOE, 1990a, *Radiation Protection of the Public and the Environment*, DOE Order 5400.5, U.S. Department of Energy, Washington, D.C.

- DOE, 1990b, *Policy On Line Management's Responsibility to Achieve Environmental Compliance*, SEN-7A-90, U.S. Department of Energy, Washington, D.C.
- DOE, 1990c, *Interaction with Internal and External Oversight Organizations*, SEN-20-90, U.S. Department of Energy, Washington, D.C.
- DOE, 1990d, *Occurrence Reporting and Processing of Operations Information*, DOE Order 5000.3B, U.S. Department of Energy, Washington, D.C.
- DOE, 1991a, *Environmental Restoration and Waste Management Five-Year Plan, Fiscal Years 1993-1997*, DOE/S-0090P, U.S. Department of Energy, Washington, D.C.
- DOE, 1991b, *Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance*, DOE/EH-0173T, U.S. Department of Energy, Washington, D.C.
- DOE, 1991c, *National Environmental Policy Act Compliance Program*, DOE Order 5440.1E, U.S. Department of Energy, Washington, D.C.
- DOE, 1991d, *Quality Assurance*, DOE Order 5700.6C, U.S. Department of Energy, Washington, D.C.
- DOE, 1991e, *Emergency Categories, Classes, and Notification and Reporting Requirements*, DOE Order 5500.2B, U.S. Department of Energy, Washington, D.C.
- DOE, 1991f, *Planning and Preparedness for Operational Emergencies*, DOE Order 5500.3A, U.S. Department of Energy, Washington, D.C.
- DOE-RL, 1983, *Environmental Protection, Safety, and Health Protection Information Reporting Requirements*, DOE-RL Order 5484.1, U.S. Department of Energy-Richland Operations Office, Richland, Washington.
- DOE-RL, 1984, *Unusual Occurrence Reporting System for Richland Operations Office*, DOE-RL Order 5484.2A, U.S. Department of Energy-Richland Operations Office, Richland, Washington.
- DOE-RL, 1989a, *U.S. Department of Energy-Richland Operations Office Environmental Protection Implementation Plan*, DOE/RL-89-18, U.S. Department of Energy-Richland Operations Office, Richland, Washington.
- DOE-RL, 1989b, *Implementation Plan for Hanford Site Compliance with U.S. Department of Energy Order 5820.2A*, DOE/RL-89-05, U.S. Department of Energy-Richland Operations Office, Richland, Washington.
- DOE-RL, 1989c, *Hanford Site Groundwater Protection Management Program*, DOE/RL-89-12, U.S. Department of Energy-Richland Operations Office, Richland, Washington.

- DOE-RL, 1990a, *Hanford Waste Minimization, Reduction, and Pollution Prevention Awareness Program Plan*, DOE/RL-89-24, U.S. Department of Energy-Richland Operations Office, Richland, Washington.
- DOE-RL, 1990b, *Hanford Site Annual Dangerous Waste Report*, Vol. 5, DOE/RL-90-10, U.S. Department of Energy-Richland Operations Office, Richland, Washington.
- DOE-RL, 1990c, *Occurrence Reporting and Processing of Operations Information*, DOE-RL Order 5000.3B, U.S. Department of Energy-Richland Operations Office, Richland, Washington.
- DOE-RL, 1991a, *Environmental Restoration and Waste Management Site-Specific Plan for the Richland Operations Office*, DOE/RL-91-25, U.S. Department of Energy, Richland Field Office, Richland, Washington.
- DOE-RL, 1991b, *Environmental Monitoring Plan*, DOE/RL-91-50, U.S. Department of Energy, Richland Field Office, Richland, Washington.
- DOE-RL, 1991c, *1990 Hanford Site Annual Waste Reduction Report*, DOE/RL-91-18, U.S. Department of Energy-Richland Operations Office, Richland, Washington.
- DOE-RL, 1991d, *Overview of the Hanford Cleanup Five-Year Plan*, DOE-0213, U.S. Department of Energy, Richland Field Office, Richland, Washington.
- DOE-RL, 1991e, *The Hanford Site Environmental Restoration and Waste Management Five-Year Plan Activity Data Sheets - Revision 1, Volume 1 and 2*, DOE/RL-89-17-REV1, U.S. Department of Energy-Richland Operations Office, Richland, Washington.
- DOE-RL, 1991f, *Hanford Site Waste Minimization and Pollution Prevention Awareness Program Plan*, DOE/RL-91-31, U.S. Department of Energy, Richland Field Office, Richland, Washington.
- DOE-RL, 1991g, *Environmental Restoration Remedial Action Quality Assurance Requirements Document*, DOE/RL-90-28, Rev. 1, U.S. Department of Energy, Richland Field Office, Richland, Washington.
- Ecology, 1990, *State Waste Discharge Permit Program Consent Order*, Permit No. DE 91NM-177, Washington State Department of Ecology, Olympia, Washington.
- Ecology, EPA, and DOE, 1990, "Liquid Effluent Study Program," *Hanford Federal Facility Agreement and Consent Order*, Volume 2, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington.
- Ecology, EPA, and DOE, 1992, *Hanford Federal Facility Agreement and Consent Order*, 2 volumes, as amended, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington.

- EPA, 1980, *Guidelines and Specifications for Preparing QA Program Plans*, QAMS-004-80, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 1983, *Interim Guidance and Specifications for Preparing Quality Assurance Project Plans*, QAMS-005/80, EPA/600/4-83-004/, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 1986, *Test Methods of Analysis for Solid Samples*, SW-846, 3rd Edition, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 1987a, *Data Quality Objectives for Remedial Response Activities-Development Process*, EPA/1540/G-87/003 and 004, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 1987b, *Interim Guidance and Specifications for Preparing Quality Assurance Project Plans*, EPA/520/1-87-028, U.S. Environmental Protection Agency, Washington, D.C.
- Freedom of Information Act*, 1966, 5 U.S.C. 552, as amended.
- KEH, 1990, *Kaiser Engineers Hanford Company Occurrence Categorization and Reporting Process*, Kaiser Administrative Procedure 23.5, Kaiser Engineers Hanford Company, Richland, Washington.
- KEH, 1993, *Quality Program*, Kaiser Engineers Hanford Company, Richland, Washington.
- National Environmental Policy Act of 1969*, as amended, 422 U.S.C. 4321 et seq.
- OMB, 1974, *Reporting Requirements in Connection with the Prevention, Control, and Abatement of Environmental Pollution of Existing Federal Facilities*, Office of Management and Budget Circular A-106, Office of Management and Budget, Washington, D.C.
- PNL, 1993, *Hanford Site Environmental Report for Calendar Year 1992*, PNL-8682, Pacific Northwest Laboratory, Richland, Washington.
- PNL, 1991a, *Facility's Management Facility Effluent Monitoring Plan for the 324 Facility*, PNL-MA-660, Pacific Northwest Laboratory, Richland, Washington.
- PNL, 1991b, *Facility's Management Facility Effluent Monitoring Plan for the 325 Facility*, PNL-MA-661, Pacific Northwest Laboratory, Richland, Washington.
- PNL, 1991c, *Facility's Management Facility Effluent Monitoring Plan for the 327 Facility*, PNL-MA-662, Pacific Northwest Laboratory, Richland, Washington.
- PNL, 1991d, *Facility's Management Facility Effluent Monitoring Plan for the 3720 Facility*, PNL-MA-663, Pacific Northwest Laboratory, Richland, Washington.

PNL, 1991e, *Quality Assurance Manual*, PNL-MA-70, Pacific Northwest Laboratory, Richland, Washington.

Privacy Act of 1974, 5 U.S.C. 552, et seq.

Reagan, R. W., 1987, *Superfund Implementation*, Executive Order 12580, Office of the President of the United States, Washington, D.C.

Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901 et seq.

Safe Drinking Water Act of 1974, as amended, Public Law 93-523, 88 Stat. 1660, 42 U.S.C. 300f et seq.

Toxic Substances Control Act of 1976, 15 U.S.C. 2601 et seq.

WAC 173-216, "State Waste Discharge Program," *Washington Administrative Code*, as amended.

WAC 173-218, "Underground Injection Control Program," *Washington Administrative Code*, as amended.

WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

WAC 173-480, "Ambient Air Quality Standards and Emission Limits for Radionuclides," *Washington Administrative Code*, as amended.

WAC 246-247, "Radiation Protection-Air Emissions," *Washington Administrative Code*, as amended.

WHC-CM-1-3, Level 1, *Management Requirements and Procedures*, Westinghouse Hanford Company, Richland, Washington.

WHC-CM-4-2, *Quality Assurance Manual*, Westinghouse Hanford Company, Richland, Washington.

WHC-CM-7-4, *Operational Environmental Monitoring*, Westinghouse Hanford Company, Richland, Washington.

WHC-CM-7-5, *Environmental Compliance*, Westinghouse Hanford Company, Richland, Washington.

WHC-CM-7-6, *Environmental Compliance Verification Manual*, Westinghouse Hanford Company, Richland, Washington.

WHC, 1989, *Annual Status Report of the Plan and Schedule to Discontinue Disposal of Contaminated Liquids into the Soil Column at the Hanford Site*, WHC-EP-0196-2, Westinghouse Hanford Company, Richland, Washington.

WHC, 1991a, *Management Plan for Facility Effluent Monitoring Plan Activities*, WHC-EP-0491, Westinghouse Hanford Company, Richland, Washington.

- WHC, 1991b, *Unit Dose Calculation Methods and Summary of Facility Effluent Monitoring Plan Determinations*, WHC-EP-0498, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1992a, *A Guide for Preparing Hanford Site Facility Effluent Monitoring Plans*, WHC-EP-0438-1, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1992b, *Quality Assurance Project Plan for Facility Effluent Monitoring Plan Activities*, WHC-EP-0446-1, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1992c, *Transmittal of Quality Assurance Program Description and Implementation Plan: DOE Order 5700.6C*, Letter from T. M. Anderson to J. D. Wagoner, 9105511B-R1, May 5, 1992, Westinghouse Hanford Company, Richland, Washington.

DISTRIBUTION

Number of CopiesONSITE

30

U.S. Department of Energy-
Richland Operations Office

J. D. Bauer	A5-15
G. M. Bell	A5-52
S. D. Bradley	R3-73
R. F. Brich	A5-55
R. E. Gerton	R3-72
R. F. Guercia	R3-80
J. B. Hall	A5-55
J. M. Hennig	R3-80
R. D. Hildebrand	A5-55
M. B. Hitt	A7-27
R. G. Holt	A5-15
R. A. Holten	A5-55
J. R. Hunter	R3-81
J. J. Keating	A7-50
R. D. Larson	A7-80
R. J. Light	A7-88
A. E. Lorenz	A7-89
L. G. Mays	A7-88
J. E. Mecca	R3-81
J. E. Ollero	A1-55
S. K. Potter	A5-18
K. Randolph	
J. E. Rasmussen	A5-15
R. P. Saget	A5-54
J. L. Spracklen	A6-35
S. D. Stites	A5-15
J. J. Sutey	K8-50
A. E. Teimonin	A5-15
L. C. Williams	A5-18
DOE-RL Public Reading Room	A1-65

4

Hanford Environmental Health Foundation

S. Gilchrist	H1-53
J. J. Maher (2)	B2-75
S. J. Matheson	H1-53

4

Kaiser Engineers Hanford Company

C. E. Anderson	G7-11
B. J. Dixon	G7-33
R. T. French	E6-61
D. R. Pratt	G7-33

DISTRIBUTION (cont)Number of CopiesONSITE

23

Pacific Northwest Laboratory

K. H. Abel	P8-08
R. W. Hanf	K6-61
A. S. Ikenberry	P7-68
R. E. Jaquish (10)	K1-30
D. L. Klages	P7-79
R. R. LaBarge	P7-72
J. W. Smith	K1-60
H. T. Tilden	P7-79
D. H. Waldkoetter	K1-77
W. C. Weimer	P7-27
W. R. Wiley	K1-46
R. K. Woodruff	K6-61
Hanford Technical Library	P8-55

39

Westinghouse Hanford Company

T. M. Anderson	B3-01
F. L. Ashworth	R1-48
S. D. Atkin	B5-30
B. A. Austin	B2-35
J. A. Bates	H6-22
R. J. Bliss	B3-04
D. L. Borders	B3-62
D. J. Carrell	H6-22
L. P. Diediker	T1-30
J. J. Dorian	H6-30
R. H. Engelmann	H6-26
B. G. Erlandson	H6-20
A. J. Fisher	A4-79
K. A. Gano	X0-21
E. M. Greager	H6-30
K. A. Hadley	R3-56
G. W. Jackson	H6-21
A. R. Johnson	H6-30
R. E. Johnson	T1-30
D. E. Kelley	H6-28
J. R. Kirkendall	H4-21
H. E. McGuire	B3-63
J. M. Nickels	H6-22
E. A. Raney	H4-21
J. A. Rivera	B2-16
W. J. Rued	H6-26
J. W. Schmidt	H6-30

DISTRIBUTION (cont)

Number of Copies

ONSITE

Westinghouse Hanford Company (cont)

R. L. Smithwick	B1-30
M. W. Stevenson	B2-35
D. J. Swaim	B3-51
R. R. Thompson	H6-32
L. W. Vance	H4-16
D. D. Volkman	H4-25
M. T. York	H6-32
EDMC (2)	H4-22
Information Release Administration (3)	A2-24

DOE/RL-93-97

This page intentionally left blank.

Distr-4

END

**DATE
FILMED**

2/23/94