U.S. Department of Energy

Office of Environmental Audit

**J.D. Ross Complex
Troutdale Substation
Acton Substation
North Bonneville Substation
Camas Substation
Longview Substation**

Environmental Audit

Bonneville Power Administration

Lower Columbia Area

November 1990

MASTER

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PREFACE
U.S. DEPARTMENT OF ENERGY
ENVIRONMENTAL AUDIT
BONNEVILLE POWER ADMINISTRATION
LOWER COLUMBIA AREA

On June 27, 1989, the Secretary of Energy announced a 10-point initiative to strengthen environmental protection within the U.S. Department of Energy (DOE). Consistent with this initiative, the Secretary emphasized and strengthened independent internal oversight as a management reform in Secretary of Energy Notice (SEN)-11-89, which would monitor the effectiveness of DOE management in complying with operational, environmental, safety, health and security standards established by law, regulation, and DOE policy.

As part of the internal oversight responsibilities within DOE, the Office of Environment, Safety and Health (ES&H) has established a program within the Office of Environmental Audit, EH-24, to conduct multidisciplinary environmental audits at DOE's operating facilities. The initial audits in this program are designed to gather baseline information on environmental compliance and management at facilities that have not undergone a DOE Headquarters Environmental Survey or Tiger Team Assessment, and that are not expected to be scheduled for a Tiger Team Assessment through Fiscal Year 1992.

The objective of the Environmental Audit Program is to provide the Secretary with information on the compliance status of DOE facilities with regard to environmental requirements, root causes for noncompliance, adequacy of DOE environmental management programs and response actions to address the identified problem areas.

This document contains findings identified between September 20 and October 5, 1990 during the Environmental Audit of the Bonneville Power Administration's (BPA's) Lower Columbia Area.

The scope of this Environmental Audit was comprehensive, covering all areas of environmental activities and waste management operations, with the exception of the National Environmental Policy Act (NEPA), which is the responsibility of the DOE Headquarters Office of NEPA Oversight. Compliance with applicable Federal, state, and local regulations, applicable DOE Orders, and internal facility requirements was assessed.

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This report documents the results of the U.S. Department of Energy's (DOE's) Environmental Audit conducted by the DOE Headquarters Office of Environmental Audit within the Bonneville Power Administration's (BPA's) Lower Columbia Area. The BPA facilities included in the Audit are the Ross Complex in Vancouver, Washington; the substations of North Bonneville, North Bonneville Annex, Camas, and Longview within the State of Washington; and the Acton and Troutdale Substations within the State of Oregon. The independent Audit was conducted by a team of professionals from DOE and contractors. The purpose of the Audit is to provide the Secretary of Energy, Admiral James D. Watkins, Ret., with the status of environmental programs within BPA's Lower Columbia Area. This is the first Power Administration to receive an Environmental Audit.

BPA is an organization within DOE which markets power from 30 Federal hydroelectric projects and 3 nuclear power plants within the Pacific Northwest. BPA also "wheels" power for Public Utility Districts within its service area. An Administrator who reports directly to the Secretary of Energy manages BPA operations. Although BPA is part of DOE, it is not funded by tax revenues and is obligated to recover the cost of its operation and maintenance through revenues. BPA revenues also provide payments to the U.S. Treasury on Federal investment in hydroelectric facilities, substations, and high-voltage transmission lines. These circumstances make BPA unique within DOE because funds expended for environmental programs must be recovered through increases in wholesale power and transmission revenues.

The scope of the BPA Lower Columbia Area Environmental Audit was comprehensive, covering all environmental media and applicable Federal, state, and local regulations; requirements and best management practices (BMPs); DOE Orders; and standard facility operating procedures, with the exception of the National Environmental Policy Act (NEPA), which is the responsibility of the DOE Headquarters Office of NEPA Oversight.

On-site activities for the BPA Lower Columbia Area Environmental Audit took place from September 20 to October 5, 1990. On-site activities included document review, interviews with BPA personnel and personnel from Federal and state agencies, reviews of previous audits and self-assessments, and daily team debriefs which were open to BPA and the regulators. Using these sources of information, the Environmental Audit team developed findings. These findings fall into two general categories: compliance findings and BMP findings. Each finding also contains the associated root cause(s).

Strengths noted by the Environmental Audit team were that the reporting required by Secretary of Energy Notice (SEN)-7 was generally adequate; the Lower Columbia Area is in the process of

discontinuing the use of 1,1,1-trichloroethane; the "Red Book" is a quality reference document that defines the wastes streams and has good waste management protocols; BPA provides polychlorinated biphenyls (PCBs) analyses of all PCB items prior to disposal; BPA changed all fuses on PCB Capacitors from 25 to 15 amperes, reducing the possibility of a PCB release upon capacitor failure; there is a good chemical tracking system in-place that effectively documents the location and movement of chemicals within BPA; and the Operations, Maintenance, and Replacement 10-Year Plan addresses many of the findings identified in the Environmental Audit and begins to develop appropriate corrective action.

The Environmental Audit team identified 25 findings dealing with the lack of conformance with Federal and state laws and regulations and DOE Orders, and 7 findings in which BMPs were not attained. Although all findings require corrective action, none required cessation of operations or reflect situations that present an immediate risk to public health or the environment. The key issues resulting from the findings are:

- BPA has not adequately implemented policies issued under DOE Orders.
- BPA does not have a formal corporate QA Program and the corporate BPA structure does not accurately reflect their stated commitment to environmental issues.
- BPA has not adequately characterized the groundwater and surface water contamination at sites throughout the Lower Columbia Area.
- Generators of dangerous and hazardous waste are not identifying, transporting, and accumulating these wastes in compliance with all applicable Federal and state requirements.
- The Audit team noted inadequacies in PCB management included storage, labeling, reporting, and spill control.

The most significant causal factors for the findings include lack of policy implementation throughout the Lower Columbia Area, inadequate training of personnel charged with environmental protection, lack of standard operating procedures for many programs, lack of reviews and appraisals, and an inaccurate perception of low risk for environmental concerns.

1.0 INTRODUCTION

1.0 INTRODUCTION

The Environmental Audit reported in this document concerns the Bonneville Power Administration's (BPA's) Lower Columbia Area. BPA is an organization within the U.S. Department of Energy (DOE) which markets power from 30 Federal hydroelectric projects and 3 nuclear power plants in the Pacific Northwest. BPA also "wheels" power for Public Utility Districts within its service area. An Administrator who reports directly to the Secretary of Energy manages BPA operations.

Secretary of Energy Notice (SEN)-6B-90 assigns the Office of Environment, Safety and Health (ES&H) the responsibility for conducting independent internal oversight audits to ensure compliance with applicable laws related to environmental protection. SEN-20-90 emphasizes the need for and value of audits by authorized oversight organizations such as ES&H to ensure that DOE activities are undertaken in an "environmentally sound manner". The Environmental Audit Program is designed to evaluate and improve the environmental compliance status of DOE facilities and to reflect the responsibility of line management for conducting operations in an environmentally safe and sound manner.

1.1 Purpose

The purpose of the Environmental Audit of BPA's Lower Columbia Area is to provide the Secretary of Energy with concise information on the following issues:

- Current environmental compliance status throughout the Lower Columbia Area, with the exception of compliance with National Environmental Policy Act (NEPA) requirements and the vulnerabilities associated with that compliance status.
- Root causes for noncompliances and best management practices (BMPs).
- Adequacy of environmental management programs at BPA.
- Response actions needed to address identified problem areas.

This information will assist DOE in determining patterns and trends in environmental compliance, BMPs, and probable root causes, and will provide information necessary for management to take necessary corrective action.

1.2 Scope

The scope of the BPA Lower Columbia Area Environmental Audit was comprehensive, covering all environmental media and applicable Federal, state, and local regulations; requirements and BMPs; DOE

Orders; and standard facility operating procedures. The environmental disciplines addressed in this assessment include air, soils/sediments/biota, surface water/drinking water, groundwater, waste management, toxic and chemical materials, quality assurance, and inactive waste sites. As part of the Environmental Audit, reports on environmental compliance and environmental appraisals were reviewed. These reports include the DOE's Annual Report to Congress; the BPA Operations, Maintenance, and Replacement 10-Year Plan; SEN-7 Quarterly Environmental Compliance Reports; BPA Annual Environmental Reports; Field Appraisal Reports; the M.O.A.; and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 120 Federal Facility Agreement for cleanup activities at the Ross Complex. In addition, the Audit included a review of the environmental monitoring programs and the effectiveness of environmental management programs in the Lower Columbia Area. Since auditing NEPA requirements is the responsibility of the DOE Headquarters Office of NEPA Oversight, BPA's compliance with NEPA was not part of the Environmental Audit and is not addressed in this report.

The Lower Columbia Area has operation and maintenance responsibility for 83 substations, 7 substation maintenance districts, and the J.D. Ross Complex, which serves as a multi-use facility for BPA. The Environmental Audit of the Lower Columbia Area focused on seven representative substations: Ross, Troutdale, Acton, North Bonneville, North Bonneville Annex, Camas, and Longview; and three maintenance districts at Ross, Troutdale, and Longview.

1.3 Approach

The BPA Lower Columbia Area Environmental Audit was conducted in accordance with the draft DOE Environmental Audit Guidance Manual, June 1990, and followed accepted audit techniques. The Audit was conducted by a team managed by a DOE Headquarters Audit Team Leader, an Assistant Team Leader from the Office of Environmental Audit, and technical contractor support personnel. The names, areas of responsibility, affiliations and biographical sketches of the team members are provided in Appendix A.

The BPA Lower Columbia Area Environmental Audit included three phases: planning, on-site activities, and reporting. During the planning phase, a letter was sent to BPA officials requesting information about the site. A pre-audit site visit was conducted on August 21 and 22, 1990. Information gathered from the information request and the pre-audit site visit formed the basis for the Audit team's on-site agenda. Once on-site, the team members modified the original agenda as more information was obtained, and additional areas of interest were identified. The final daily audit agenda is contained in Appendix B.

On-site activities for the BPA Lower Columbia Area Environmental Audit took place from September 20 to October 5, 1990. On-site

activities included document review, interviews with BPA personnel and personnel from Federal and state agencies, reviews of previous audits and self-assessments, and daily team debriefs which were open to BPA and the regulators. The list of site documents reviewed by the Audit team and the list of the Audit team's contacts and interviews are provided in Appendices C and D, respectively. Using these sources of information, the team developed findings as discussed below.

The problems identified by the Audit team were categorized as either a "compliance finding" or a "BMP finding." Compliance findings were conditions that in the judgment of the Audit team may not satisfy applicable environmental regulations, DOE Orders (including internal DOE Memoranda, where referenced), internal environmental site policies and operating standards, enforcement actions, agreements with regulatory agencies, or permit conditions. BMP findings are derived from regulatory agency guidance, accepted industry practice, and professional judgment. Within these categories, the findings are prefaced by a statement of the performance objective(s). The performance objective(s) for the compliance findings are derived from promulgated regulations and final DOE Orders, consent orders, agreements, permit conditions, and site policies and procedures. The performance objective(s) for the BMP findings are derived from regulatory agency guidance, accepted industry practice, and professional judgment. The findings are not arranged in order of relative significance.

In an effort to understand why a finding was identified, a systematic approach was implemented to perform a "probable root cause" analysis. This approach is initiated by a series of "why" questions concerning the cause(s) of a finding. The apparent cause(s) are compiled and reasons for the selection of specific cause(s) developed and provided within the supporting information for each finding. The causal factors are then used to determine the full scope of corrective action required to rectify identified findings and prevent recurrence.

1.4 Description of Facilities

BPA markets power from 30 Federal hydroelectric projects and 3 nuclear power plants in the Pacific Northwest. Although part of the DOE, BPA is not funded by tax revenues and is obligated to recover the cost of its operation and maintenance through revenues. Bonneville's revenues also provide payments to the U.S. Treasury on Federal investment in hydroelectric facilities, substations, and high-voltage transmission lines. These circumstances make BPA unique within DOE because funds expended for environmental programs must be recovered through wholesale power and transmission revenues.

BPA's service area includes Washington, Oregon, Idaho, Montana west of the Continental Divide, and some adjoining portions of Wyoming, Utah, Nevada and California. To ensure that power can be delivered

reliably throughout the service area, BPA has built and owns more than 14,000 circuit miles of high-voltage transmission lines and about 400 substations, each requiring a considerable amount of maintenance. To ensure proper maintenance and operation of the power system and to efficiently manage resources, BPA is divided into four management areas: the Puget Sound Area, the Upper Columbia Area, the Snake River Area, and the Lower Columbia Area (see Figure 1-1).

The Environmental Audit covered by this report includes representative facilities within the Lower Columbia Area. These facilities are: the Ross Complex and the substations of North Bonneville, North Bonneville Annex, Camas, and Longview, located in the State of Washington; and the substations of Troutdale and Acton, located in the State of Oregon (see Figure 1-2). Each of these facilities is described below.

Ross Complex

The J.D. Ross Complex is located on Highway 99 within the city limits of Vancouver, Washington (see Figure 1-3). The site is situated on a sedimentary terrace between two streams. These streams, Burnt Bridge Creek and Cold Creek, form topographic boundaries for the northern and southwestern portions of the site. The southeastern portion of the site borders residential property.

The Ross Complex is an active facility that has been owned and operated by BPA since 1939; it serves as the control center for the transmission of electricity throughout the Pacific Northwest. Since its construction, the Ross Complex has provided research and testing facilities, as well as maintenance, construction, operations, and waste handling for BPA.

Maintenance activities at the Ross Complex routinely involve handling transformer oils containing polychlorinated biphenyl (PCB); organic and inorganic compounds for preserving wood transmission poles; paints; solvents; and waste oils. Testing and laboratory activities include using heavy metals, such as mercury, and other organic and inorganic compounds for analytical procedures.

There are over 40 buildings at the Ross Complex. Activities at some of the major buildings are as follows:

- The Dittmer Control Center (Z-695) provides control of generation and transmission of high-voltage power to the Pacific Northwest states, including Washington, Oregon, Idaho, Montana, and California, and has space designated as the System Maintenance Headquarters.

FIGURE 1-1
BONNEVILLE POWER ADMINISTRATION'S MANAGEMENT AREAS

FIGURE 1-2
LOCATION OF AUDITED MAINTENANCE DISTRICTS AND SUBSTATIONS

FIGURE 1-3
LOCATION OF THE ROSS COMPLEX

- The Warehouse (Z-759) is the Ross Complex property dedicated to storing and accounting for electrical equipment, materials, and supplies to support the BPA transmission system.
- The Construction Services Building (Z-610) serves two purposes, providing headquarters for BPA's construction forces who build and test new system electrical facilities and providing space for BPA's multi-purpose administrative computer system.
- The Ampere Building (Z-989, Z-990, Z-991) provides space for headquarters of laboratories that are dedicated to performing specialized testing, research, and development of electrical systems and related subjects. The Ampere Building also provides space for various system maintenance services and Ross District Transmission Line Maintenance organizations such as System Protection Maintenance, Power System Control, and Substation Electrical Maintenance.

A large part of the Ross Complex is comprised of the J.D. Ross Substation, which transforms 345-kilovolt (kV) and 230-kV power into usable voltages for BPA customers near Vancouver, Washington.

Troutdale Substation

The Troutdale Substation, located in a floodplain in Troutdale, Oregon, provides power to the Reynolds Metal Company through four 230/13.8-kV transformers. Power into the substation is supplied by one 500-kV line and three 230-kV lines. There are two transformer banks and three capacitor groups located on-site. The substation was first energized in 1942.

Acton Substation

The Acton Substation is located on a hill immediately south of Bonneville Dam on U.S. Forest Service property. Acton serves two 13.8-kV circuits, one to the City of Cascade Locks and the other to the U.S. Army Corps of Engineers at the Bonneville Dam. The substation is supplied by one 115-kV line.

North Bonneville Substation

The North Bonneville Substation is located on a terrace above the Columbia River in North Bonneville, Washington. The substation serves as a switching station that receives power generated at the Bonneville Dam through four 230-kV transmission lines.

North Bonneville Annex

The North Bonneville Annex, located adjacent to the North Bonneville Substation, contains one 115-kV transformer supplied by one 115-kV line from Bonneville Dam and serves Skamania Public

Utility District through one 12.5-kV circuit. The substation was first energized in 1940.

Camas Substation

The Camas Substation is located on a terrace above the Columbia River in Washugal, Washington. The substation serves two 12.5-kV feeder circuits to the Clark Public Utility District with the source being a 115-kV line from Bonneville Dam. There are two 115/12.5-kV transformers on-site. The substation was first energized in 1949.

Longview Substation

The Longview Substation is located in wetlands in Longview, Washington, and consists of 230-kV, 115-kV, 69-kV, and 13.8-kV switch yards, five shunt capacitor groups, three transformer banks, one booster bank, and two grounding transformers. The substation serves as a switching station for many of the transmission lines in Longview and as a point of delivery to the Reynolds Metal Company. The site was energized in 1940.

**2.0 SUMMARY OF ENVIRONMENTAL AUDIT FINDINGS,
KEY ISSUES, AND CAUSAL FACTORS**

2.0 SUMMARY OF ENVIRONMENTAL AUDIT FINDINGS, KEY ISSUES, AND CAUSAL FACTORS

This section presents a summary of findings identified during the Environmental Audit (presented in Section 3.0), a discussion of the key issues within the findings, and a summary of the apparent causal factors which contributed to the findings.

2.1 Findings Summary

The Environmental Audit team identified 32 findings in the Audit of the Bonneville Power Administration (BPA) Lower Columbia Area. Twenty-five of the findings reflect problems in which the standards of Federal, state, or local laws or regulations, or U.S. Department of Energy (DOE) Orders have not been met. Seven findings represent conditions in which best management practices (BMPs) are not employed. None of the findings reflect situations that present an immediate risk to public health or the environment. The titles of the findings are presented in Table 2-1 by media or discipline, as appropriate.

Air - Within the Lower Columbia Area, the majority of air emissions are produced at the Ross Complex. The other maintenance areas and substations have essentially no emissions except for gasoline and periodic use of solvents. Total suspended particulates (TSP) and volatile organic compounds (VOCs) are the air emissions of greatest importance in the Lower Columbia Area.

There have been no significant sources of criteria pollutants (SO_2 , NO_x , CO, lead) since the Ross oil-fired boiler was removed in 1986. No potential air toxics are used in significant amounts. While 1,1,1-trichloroethane was previously used in significant quantities, a campaign is now in place within the Lower Columbia Area to eliminate its use. Asbestos is also a parameter of concern within the Lower Columbia Area since asbestos insulation remains in many buildings. Concerns identified during the Environmental Audit relate to identification of air sources which should be considered for inclusion in the Order of Authorization to Operate (OAO), improper labeling of gasoline pumps, and improper control of emissions.

Surface Water - Facilities within the Lower Columbia Area typically discharge stormwater and store oil and hazardous materials requiring spill prevention measures. Concerns identified during the Audit address characterization of liquid effluents and surface water, applicability of permit requirements, and deficiencies in spill prevention and control programs. Liquid effluents, including stormwater discharges, have not been adequately characterized and no surface water monitoring program exists to evaluate potential environmental impacts of discharges to surface water. Stormwater discharges from Lower Columbia Area facilities are not permitted

TABLE 2-1
LISTING OF FINDINGS IDENTIFIED BY THE ENVIRONMENTAL AUDIT TEAM

Finding Number	Finding Title	Prior ID by BPA*
A/CF-1	Lack of Registration of Air Emission Sources	N
A/CF-2	Lack of Required Gasoline Pump Labels	N
A/BMP-1	Inadequate Air Emission Controls	Y
SW/CF-1	Determination of Need for National Pollutant Discharge Elimination System Permit	Y
SW/CF-2	Inadequate Development and Implementation of the Spill Prevention, Control, and Countermeasure Plan	Y
SW/CF-3	Inadequate Response to Oil Leaks, Weeps, and Drips	N
SW/BMP-1	Inadequate Environmental Monitoring Program for Surface Water	Y
SW/BMP-2	Lack of Positive Secondary Spill Containment Systems	N
GW/CF-1	Lack of Groundwater Protection Management Plan	P
GW/CF-2	Unusable Wells Lack Proper Abandonment	Y
GW/CF-3	Groundwater Well Surface Protective Measures	N
WM/CF-1	Inadequate Characterization of Hazardous Waste	Y

TABLE 2-1 (Continued)
LISTING OF FINDINGS IDENTIFIED BY THE ENVIRONMENTAL AUDIT TEAM

Finding Number	Finding Title	Prior ID by BPA *
WM/CF-2	Inadequate Accumulation of Hazardous Wastes	P
WM/CF-3	Lack of Notifications and Certifications Required for Hazardous Wastes Subject to Land Disposal Restrictions	N
WM/CF-4	Inadequate Procedures for Reporting Spills and Releases of Dangerous Wastes and Hazardous Substances	Y
TSCA/CF-1	Inaccurate and Inadequate Information in the Annual Polychlorinated Biphenyls Reports	Y
TSCA/CF-2	Improper Storage for Disposal of PCB Items	P
TSCA/CF-3	Improper Labeling of PCB Equipment	N
TSCA/CF-4	Inadequate Operation and Oversight of Herbicide Application and Storage Program	Y
TSCA/BMP-1	Improper Storage of Spare PCB Capacitors	N
TSCA/BMP-2	Lack of Analysis of PCBs in Electrical Bushings	N
QA/CF-1	Lack of a Documented QA Program for BPA Environmental Analyses Being Performed at the Ross Complex	N
QA/CF-2	Lack of BPA Contractor Laboratory and Lower Columbia Area Field Remediation QA Audits or Appraisals	N

TABLE 2-1 (Continued)
LISTING OF FINDINGS IDENTIFIED BY THE ENVIRONMENTAL AUDIT TEAM

<u>Finding Number</u>	<u>Finding Title</u>	<u>Prior ID by BPA*</u>
QA/CF-3	Lack of BPA QA Requirements in Purchase Orders for Contractor Laboratories	N
QA/CF-4	Inadequate BPA Chain-of-Custody for Environmental Samples	P
IWS/CF-1	Inadequate Implementation of DOE Order 5400.4	N
IWS/CF-2	Inadequate Implementation of the National Contingency Plan	Y
IWS/CF-3	Lack of an Emergency Planning and Community Right-to-Know Act Program	N
MGT/CF-1	Inadequate Environmental Audit Program	N
MGT/CF-2	BPA Lacks an Organizational Quality Assurance Program	N
MGT/BMP-1	Ineffective Organizational Structure	N
MGT/BMP-2	Inadequate Quality Assurance Practices for Corrective Actions	N

* Previously identified by BPA in one or more of the following documents: Field Appraisal Reports; BPA Operations, Maintenance, and Replacement 10-Year Plan; and Quarterly Environmental Compliance Reports (SEN-7 Reports).

Y = Yes

N = No

P = Partially Identified

but may be subject to National Pollutant Discharge Elimination System (NPDES) permit requirements. Deficiencies in spill prevention plans and controls were identified in a previous (1987) internal appraisal and plans exist for corrective actions.

Groundwater - BPA has been deficient with regard to addressing groundwater protection and monitoring. It has not fully developed a Groundwater Protection Management Plan for the Lower Columbia Area. Groundwater has been contaminated beneath the Ross Complex as a result of past site activities. Although BPA has initiated source identification efforts at the Ross Complex site (Preliminary Assessment [PA], Site Investigation [SI], Draft Remedial Investigation/Feasibility Study [RI/FS]), and has performed periodic groundwater sampling at other facilities, more effort will be required to adequately fulfill the requirements for development of a Groundwater Management Protection Plan. Additional groundwater findings identified insufficient surface protection for monitoring wells and the existence of several improperly abandoned wells.

Waste Management - Activities in the Lower Columbia Area involve generation and accumulation of hazardous wastes at numerous facilities throughout the Area and transport of these wastes to the Ross Complex for storage. Concerns identified during the Audit are mainly directed toward activities conducted by waste generators within the Lower Columbia Area. Hazardous wastes may not be identified and characterized as necessary to ensure that they are managed in accordance with all applicable requirements. Further deficiencies were noted with respect to the manner in which hazardous wastes are managed by generators, including inadequate accumulation of hazardous wastes, transportation of dangerous and hazardous wastes from generators to non-Resource Conservation and Recovery Act (RCRA) permitted storage areas, lack of notifications and certifications required for hazardous wastes subject to land disposal restrictions, and inadequate procedures for reporting spills and releases of dangerous wastes and hazardous substances. BPA has addressed many of the problems previously identified in a 1986 hazardous waste internal appraisal. Past findings, however, were primarily directed toward operation of the permitted hazardous waste storage facilities at Ross.

Toxic and Chemical Materials - The system for complying with regulations on polychlorinated biphenyl (PCB) in the BPA Lower Columbia Area has several deficiencies. For instance, deficiencies in the Annual PCB Report have resulted in a Notice of Significant Noncompliance (NOSN) from the U.S. Environmental Protection Agency (EPA), Region X. Efforts to remove the deficiencies cited in the NOSN have been ineffective partly because BPA has never completed an accurate accounting of all PCB electrical equipment. Storage of PCB items, both for disposal and for re-use, was noted to have deficiencies (PCB items awaiting disposal were found outside the designated storage facility, Building Z-772, and PCB Capacitors for re-use are routinely stored outside). Labeling of PCB Transformers

was incomplete since a transformer at North Bonneville was found without the proper label. The BPA policy to analyze and tag all oil-filled equipment was seen to be incomplete since some equipment is not tagged, some is incorrectly tagged and some has not been analyzed. Failure to analyze or label electrical bushings presents a unique problem since many older bushings are thought to be high in PCB content.

Quality Assurance - There was a lack of a documented Quality Assurance (QA) Program for BPA laboratory analysis and environmental sampling techniques, placing doubt on the validity and defensibility of environmental data generated by BPA. In addition, the lack of formal audits on environmental contractor activities coupled with the lack of adequate QA requirements in vendor contracts could make the quality of contractor-generated environmental data questionable.

Inactive Waste Sites - The BPA Ross Complex was placed on the National Priorities List (NPL) in 1989 as a result of historical releases of hazardous substances from several inactive waste sites. BPA has signed an FFA with the EPA and the Washington Department of Ecology to conduct remediation at Ross. An RI/FS is currently being performed to characterize contamination at the site and develop remedial alternatives. Other facilities within the Lower Columbia Area also have inactive waste sites that are undergoing or facing possible remediation. However, actions being taken at some of these inactive waste sites have not been performed in accordance with DOE Orders that implement planning and administrative requirements of CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (also known as the National Contingency Plan [NCP]). Actions for which potential problems were identified include consideration of interagency agreements and ensuring compliance with the requirements of the NCP, including requirements addressing PAs and site characterization, remedial activities, consideration of alternatives, remedy selection, community relations and public participation, and establishment of cleanup standards. In addition, the lack of an Emergency Planning and Community Right-to-Know Act of 1986 (also known as the Superfund Amendment and Reauthorization Act [SARA] Title III) Program is of concern.

Environmental Management and Self-Assessment - BPA Lower Columbia Area has made progress in identifying environmental problems in its appraisal program since 34 percent of the Environmental Audit findings were previously identified by BPA. However, the frequency of appraisals and audits and the narrow scope of some environmental areas appraised, both from internal and external sources, have contributed to environmental deficiencies within the BPA Lower Columbia Area. In addition, inadequate QA procedures for corrective action and findings close-out for environmental issues have contributed to slow and potentially ineffectual responses to identified environmental issues. Also, the organization structure at BPA does not appear to reflect the corporate commitment to the

environment, and the lack of an overall QA Program has detracted from the efforts to ensure compliance and excellence in environmental programs.

2.2 Key Environmental Issues

The key environmental issues identified by the Audit team are:

Inadequate Implementation of DOE Orders - BPA has not adequately implemented policies issued under DOE Orders including: 5400.1 General Environmental Protection Program, 5400.2A Environmental Compliance Issue Coordination, 5400.4 CERCLA Requirements, 5700.6B Quality Assurance, and 6340.1A Design Criteria. As a result, general environmental programs are being implemented and actions have been carried out under each program that are inconsistent with DOE requirements and Federal, state, and local regulations and laws (Findings SW/BMP-1, GW/CF-1, QA/CF-1, QA/CF-2, QA/CF-3, QA/CF-4, IWS/CF-1, IWS/CF-2).

Organizational Structure - The corporate BPA structure does not accurately reflect its stated commitment to environmental issues. BPA does not have a formal corporate QA Program and has numerous deficiencies in the appraisal program (Findings MGT/CF-1, MGT/CF-2, MGT/BMP-1, MGT/BMP-2, QA/CF-1, QA/CF-2).

Lack of Adequate Characterization for Ambient Conditions and Discharges to Groundwater and Surface Water - BPA has not adequately characterized groundwater and potential contamination thereof at sites throughout the Lower Columbia Area. A formal Groundwater Protection Management Plan has not been prepared for monitoring and characterizing groundwater. Effluents to surface water, surface water quality, and potential impacts to surface water have not been adequately characterized (Findings SW/BMP-1, GW/CF-1, IWS/CF-2).

Inadequate Management of Dangerous and Hazardous Wastes by Generators - Generators of dangerous and hazardous waste are not managing these wastes in compliance with all applicable Federal and state requirements. Not all wastes are properly identified or characterized by generators as dangerous or hazardous waste. Waste accumulation areas do not meet all applicable requirements. Dangerous and hazardous wastes are being transported to non-RCRA-permitted BPA storage areas. Although BPA has developed procedures for waste generators to assist with proper management of dangerous and hazardous wastes, some procedures are incomplete, outdated, or are not being implemented (Findings WM/CF-1, WM/CF-2, WM/CF-3).

Inadequate Management of PCBs - Deficiencies in the Annual PCB Report to EPA resulted in an NOSN. Efforts to remove the deficiencies cited in the NOSN have been largely ineffective partly because BPA has never completed an accurate accounting of all PCB electrical equipment. Other areas of PCB deficiencies include: inadequate storage of PCB items both for disposal and for re-use,

inadequate labeling of PCB Transformers, incomplete tagging of oil-filled equipment, and failure to analyze or label electrical equipment, including bushings which may be high in PCB content (Findings TSCA/CF-1, TSCA/CF-2, TSCA/CF-3, TSCA/BMP-1, TSCA/BMP-2).

2.3 Causal Factors Summary

In an effort to understand why a finding occurred, a systematic approach was implemented to perform a "probable root cause" analysis. This approach is initiated by a series of "why" questions concerning the apparent cause(s) of a finding. The cause(s) and rationale(s) are identified and placed in the supporting information for each finding. The causal factors are then used by the Program Official to determine the corrective actions required to rectify identified findings and prevent recurrence. Definitions of the causal factors used are presented in Appendix G.

The Environmental Audit identified 13 apparent causal factors which contributed to the occurrence of the findings (see Table 2-2). The six causal factors that appeared most frequently are policy implementation, procedures, training, reviews and appraisals, risk, and supervision (see Table 2-2). Each of these causal factors is discussed below.

Policy Implementation - appeared most frequently, in 90 percent of the findings, and was evident in all disciplines. In many cases, the inability of BPA to fully implement Federal, state, and local regulations, DOE Orders, or BM standards appeared to result from other factors, including inadequate training, procedures, appraisals, and supervision as identified on Table 2-2.

Procedures - appeared as a causal factor in 50 percent of the findings, most prominently in the groundwater, waste management, QA, and inactive waste sites disciplines. In these findings, BPA procedures, such as Standards, Procedures and Information (SPIFs) or guidances needed to ensure implementation of Federal, state, and local regulations, DOE Orders, or BMP standards, were either absent or incomplete or were not being followed correctly by all applicable personnel.

Training - appeared as a causal factor in 47 percent of the findings, most prominently in the groundwater, waste management, QA, and inactive wastes sites disciplines. In these findings, personnel had not received the proper training to perform the functions with which they were charged, or training programs were either incomplete or missing.

TABLE 2-2
SUMMARY OF ENVIRONMENTAL AUDIT FINDINGS BY CAUSAL FACTORS

Finding Number	Causal Factors										
	Policy	Policy Implementation	Procedures	Personnel	Resources	Training	Change	Risk	Appraisals, Audits/Reviews	Design	Human Factors
A/CF-1		X	X						X		
A/CF-2		X							X		
A/BMP-1		X	X			X			X		
SW/CF-1		X									
SW/CF-2		X						X			
SW/CF-3		X	X					X			X
SW/BMP-1		X						X			X
SW/BMP-2		X						X		X	
GW/CF-1		X				X					X
GW/CF-2		X	X			X					
GW/CF-3		X	X			X					X
WM/CF-1		X	X			X			X		
WM/CF-2		X	X			X			X		
WM/CF-3		X	X			X					

**TABLE 2-2 (Continued)
SUMMARY OF ENVIRONMENTAL AUDIT FINDINGS BY CAUSAL FACTORS**

Finding Number	Causal Factors												
	Policy	Policy Implementation	Procedures	Personnel	Resources	Training	Change	Risk	Appraisals, Audits/Reviews	Design	Human Factors	Barriers and Controls	Supervision
WM/CF-4		X	X			X							X
TSCA/CF-1		X	X						X				
TSCA/CF-2		X			X								
TSCA/CF-3		X							X				
TSCA/CF-4		X				X							
TSCA/BMP-1	X												
TSCA/BMP-2	X								X				
QA/CF-1		X	X						X		X		
QA/CF-2		X				X			X		X		
QA/CF-3		X	X									X	
QA/CF-4		X	X			X							
IWS/CF-1		X		X		X		X				X	X
IWS/CF-2		X	X	X		X		X			X		X
IWS/CF-3		X	X			X			X				

TABLE 2-2 (Continued)
SUMMARY OF ENVIRONMENTAL AUDIT FINDINGS BY CAUSAL FACTORS

Finding Number	Causal Factors												
	Policy	Policy Implementation	Procedures	Personnel	Resources	Training	Change	Risk	Appraisals, Audits/Reviews	Design	Human Factors	Barriers and Controls	Supervision
MGT/CF-1		X						X					
MGT/CF-2		X						X					
MGT/BMP-1								X					
MGT/BMP-2		X	X			X							
TOTAL	2	29	16	2	1	15	0	9	11	1	3	3	6

Reviews and Appraisals - appeared as a causal factor in 34 percent of the findings and was evident in all disciplines. This factor appeared to contribute to findings in two distinct ways. In the first case, BPA had not been able to implement corrective actions in response to findings from previously conducted reviews and appraisals or had not prevented the problems, once corrected, from recurring. In the second case, BPA internal review processes were either missing or flawed and consequently failed to identify existing problems.

Risk - appeared as a causal factor in 28 percent of the findings and was most prominent in the surface water, inactive waste sites, and management disciplines. In these findings, an inaccurate perception of the relative degree of risk associated with program activities or applicable requirements contributed to inadequate implementation of program goals and procedures.

Supervision - appeared as a causal factor in 18 percent of the findings and was most prominent in the groundwater and inactive waste sites disciplines. In these findings, BPA oversight and supervision of personnel was not adequate in all cases to ensure that program goals and procedures were implemented as stated in BPA procedures and guidance.

Other causal factors appeared in less than 10 percent of the findings. These factors included:

- Existence of policies to address particular issues;
- The skills and background of the personnel charged with implementing programs and procedures;
- Resources or materials available to implement programs and procedures;
- Changes in regulations or program activities;
- Design of systems or programs;
- Human factors such as fatigue or deliberate circumvention of policies; and
- Administrative and physical barriers.

The following section presents the specific findings, by discipline, identified by the Environmental Audit and discusses in greater detail the causal factors that appeared to contribute to the findings.

3.0 ENVIRONMENTAL OVERVIEWS AND AUDIT FINDINGS

3.0 ENVIRONMENTAL OVERVIEWS AND AUDIT FINDINGS

The following subsections contain the environmental overviews and findings identified by the Environmental Audit team by media discipline.

3.1 Air

3.1.1 Overview

The purpose of the air portion of the Environmental Audit was to assess current operational practices at the Ross Complex and representative substations within the Lower Columbia Area with regard to 1) regulations promulgated under the Clean Air Act; 2) Washington State regulations on air pollution control, including those promulgated by the Washington Department of Ecology (Ecology) and the Southwest Air Pollution Control Authority (SWAPCA); and 3) best management practices (BMPs) associated with air pollution control. Table 3-1 lists applicable regulations, requirements, guidelines, and U.S. Department of Energy (DOE) Orders used to evaluate the air discipline.

The general approach to the air audit included the following activities: 1) an examination of the major facilities and air sources including emissions control systems; 2) interviews with Bonneville Power Administration (BPA) and Ross personnel; 3) a review of the current (8-10-90) SWAPCA Order of Authorization to Operate (OAO), previous SWAPCA Orders, other site documents; and 4) an interview (by phone) with the SWAPCA inspector (who issued the OAO).

Total suspended particulates (TSP) and volatile organic compounds (VOCs) are the air emissions of greatest importance in the Lower Columbia Area, with the majority of air emissions being produced at the Ross Complex. The other maintenance areas and substations within the Lower Columbia Area have essentially no emissions except for gasoline and periodic use of solvents.

TSP sources at Ross include: sawdust from a variety of woodworking operations, grit from a number of sandblasters (controlled by baghouses), paint from three paint booths (the larger booths are controlled by filters), welding fumes from operations in Building Z-671 and the Plasma Torch Welding Building (controlled by electrostatic precipitators [ESPs]).

TABLE 3-1
LIST OF APPLICABLE AIR
REGULATIONS/REQUIREMENTS/GUIDELINES

<u>Regulations/ Requirements/ Guidelines</u>	<u>Section/Title</u>	<u>Authority</u>
40 CFR 50-88	Clean Air Act Implementing Regulations	EPA
Washington Administrative Code Chapter 173-400	General Air Pollution Regulations	Ecology
Southwest Air Pollution Control Authority Regulations Sections 400-010 through 400-220	General Regulations for Air Pollution Sources	SWAPCA
DOE Order 5400.1	General Environmental Protection Program	DOE
DOE Order 6430.1A	General Design Criteria	DOE

Sources of VOCs at Ross consist of the following: emissions from the above-mentioned paint rooms (uncontrolled since the filters remove only particulates), small traces of gases from the welding operations (uncontrolled since gases are not removed by the ESPs), vapors from six large (10,000-gallon) storage tanks, several small sources (a wash tank, a degreasing tank and a tempering oil bath) in Building Z-671 and several small sources (two wash tanks and two drying ovens) in the Ampere Building. As with other small sources, controls include proper utilization of covers on tanks and degreasers and removal of solvents from equipment not in use.

There have been no significant sources of other criteria pollutants (SO_2 , NO_x , CO, lead) since the oil-fired boiler was removed in 1986. No potential air toxics are used in significant amounts. While 1,1,1-trichloroethane was previously used in significant quantities, a campaign is now in place within the Lower Columbia Area to eliminate its use. Freon use in air conditioners does not represent a significant source.

Asbestos is also a parameter of concern within the Lower Columbia Area since asbestos insulation remains in many buildings. Policy at BPA is to allow asbestos to remain unless deterioration is evident or remodeling takes place, at which time removal and disposal is conducted.

The air portion of the Environmental Audit identified two compliance findings and one BMP finding. These findings relate to identification of air sources which should be considered for inclusion in the OAO, improper labeling of gasoline pumps, and improper control of emissions.

3.1.2 Findings

A/CF-1 Lack of Registration of Air Emission Sources

Performance Objective: Section 400-100 of the Washington State SWAPCA General Regulations for Air Pollution Sources requires that: "All air contaminant emission units and related control apparatus within the jurisdiction of the Authority, shall be registered with the Authority upon request." (The annual state inspection of sources implies a "request for registration" of similar sized sources that have not been registered.) After review of such registrations, the Authority issues (or denies) an OAO.

Finding: BPA has not identified, in accordance with Section 400-100 of the SWAPCA regulations, all-in service air emission sources that may be required to be included in the OAO.

Neither the Washington nor the SWAPCA regulations clearly identify "de minimis" quantities of air emissions below which sources do not require registration or inclusion on the OAO. During the Environmental Audit, a total of 16 sources which may require inclusion on the OAO were identified. These sources, listed in

Table 3-2, consist of 12 degreasers, 3 sandblasters, and a solvent recovery still. Although none of these sources are large, collectively they may alter the air emissions inventory calculated for Ross by the SWAPCA.

The cause of this finding appears to be inadequate implementation of the state air regulations, insofar as BPA has no procedures to periodically review air emission sources for compliance with the SWAPCA regulations other than the annual SWAPCA inspection. Additionally, the recent SWAPCA inspection of air emission sources was inadequate in that it did not identify the small emission sources as potentially requiring inclusion in the OAO.

A/CF-2 Lack of Required Gasoline Pump Labels

Performance Objective: Title 40 Chapter 80.22 of the Code of Federal Regulations (40 CFR 80.22) requires gasoline pumping stations with storage tanks of at least 550-gallon capacity to post appropriate signs concerning dispensing of unleaded and leaded gasoline. For unleaded gasoline, the regulation requires that each pump stand be labeled "Unleaded Gasoline" and that a sign be posted in the vicinity of the pumps stating: "Federal law prohibits the introduction of any gasoline containing lead or phosphorus into any motor vehicle labeled 'Unleaded Gasoline Only'."

Finding: BPA gasoline pumping stations at Ross, Troutdale, and Longview do not have signs in the vicinity of the pumps restricting the use of leaded gasoline, as required by 40 CFR 80.22.

The BPA gasoline pumping stations are used exclusively to provide fuel to BPA vehicles. During the Audit, three BPA facilities with gasoline pumps, Ross, Troutdale and Longview, were visited. The Ross station consists of a 10,000-gallon storage tank, while the Troutdale and Longview station tanks each have 1,000 gallon capacities. These stations dispense only unleaded gasoline. Labels citing the Federal restriction on the introduction of leaded gasoline into vehicles requiring unleaded gasoline were not present on pumps at the three locations reviewed during the Audit. Although proper labels were placed on these pumps during the Audit, other BPA stations which were not visited during the Audit may have similar problems.

The cause of this finding appears to be related to lack of review and policy implementation. The policy for labeling cited in 40 CFR 80.22 had not been implemented, and review of air quality requirements by BPA personnel had not revealed this deficiency.

TABLE 3-2
POTENTIAL BPA UNAUTHORIZED AIR EMISSION
SOURCES - SEPTEMBER 1990

<u>Building</u>	<u>Process Description</u>
Z-671, Maintenance and Construction Services (MKSG)	Solvent Recovery Still Degreaser (Safety Kleen)
Z-989, Ampere (LDSR, Ross Field Shop)	Sandblaster
Z-989, Ampere (LDSQ, Electrical Shop)	Degreaser (part of paint booth)
Z-989, Ampere (LDSQ, Substation Maintenance Shop)	Sandblaster
Z-991, Ampere (MMNE, Heavy Mobile Equipment Repair Shop)	Nine Degreasers (seven Safety Kleen) Sandblaster
Z-992, Ampere (MMNE, Heavy Mobile Equipment Storage)	Degreaser

Performance Objective: Current industry practice recommends that all air emission controls, whether engineered or administrative, be utilized to the fullest extent practical. This practice is supported by the first of the Valdez Principles, "Protection of the Biosphere" which recognizes the importance of minimizing "the release of any pollutant that may cause environmental damage to air, water, or earth or its inhabitants". The Valdez Principles are endorsed by BPA as "goals toward which we will continually strive" (A-1).

Finding: Air emission control devices, especially administrative controls, are not utilized to the fullest extent practical at BPA, as recommended by current industry practice.

During inspections conducted as part of the Environmental Audit, several examples of neglecting administrative controls were found which may result in measurable increases in released VOCs. In a storage shed outside Building Z-765, four uncovered 5-gallon cans containing light solvents were found. Adjacent to Building Z-765, a solvent degreaser, which had been removed from service several months earlier, still contained solvent. Although these are small sources, uncovered solvent cans and solvent-containing devices can needlessly emit their entire contents to the atmosphere. The issue of uncovered solvent cans was mentioned in a previous audit (WM-20).

The cause of this finding appears to be inadequate implementation of the Valdez Principles and BMPs to control air emissions; procedures have not been developed to control these emissions, and training in adherence to BMPs for air emission controls is ineffective.

3.2

Soils/Sediments/Biota

The purpose of the soils/sediments/biota portion of the Environmental Audit of the Bonneville Power Administration (BPA) Lower Columbia Area was to 1) evaluate the environmental monitoring programs, 2) evaluate the potential and/or actual contamination of these media by hazardous constituents as a result of past and present operations, and 3) compare the environmental monitoring data results of these media with applicable concentration guidelines and requirements.

The general approach to the soils/sediments/biota Audit included review of the environmental monitoring activities, observation of known or suspected contamination sources, and observation of contaminant release controls or stabilization procedures. Additionally, the Audit team interviewed BPA personnel performing or responsible for these activities in the Lower Columbia Area and reviewed associated documentation. Primary emphasis of this analysis was upon the Ross Complex and Troutdale and Longview Substations.

The BPA transmission system traverses a vast area, through a landscape which is both diverse and complex. The Lower Columbia Area spans a region from Skamania County, north of the Columbia River in Washington, south to the California border, and west to the Cascade Range. The Lower Columbia Area has a predominantly steep/rolling relief, with a surficial geology of metasedimentary and metavolcanic rocks interspersed with sedimentary. The Willamette Valley, at the center of the Lower Columbia Area, is largely alluvial/sedimentary with an interspersing of volcanic intrusions. The average total annual precipitation in the Lower Columbia Area is 60 to 100 inches for the Coast Range, 40 to 80 inches for the Willamette Valley south to the California border, and 20 to 110 inches in the Cascade Range. The average annual snowfall in the Lower Columbia Area is 12 to 24 inches, except for the Cascade Range where the annual average is 40 to 400 inches. The dominant vegetation in the Lower Columbia Area is coniferous, except for the Willamette Valley south to the California border where grasslands and oak woodlands are also present.

One plant and several species of wildlife officially designated as threatened or endangered by the U.S. Fish and Wildlife Service occur in counties within the Lower Columbia Area where BPA has transmission lines and facilities.

The soils/sediments/biota portion of the Environmental Audit contains no findings. Relevant findings concerning monitoring programs, evaluation and characterization of contamination, and compliance with relevant concentration guidelines and requirements are discussed in the surface water/drinking water, groundwater, and inactive waste sites sections of this report.

3.3 Surface Water/Drinking Water

3.3.1 Overview

The purpose of the surface water portion of the Bonneville Power Administration (BPA) Lower Columbia Area Audit was to 1) evaluate wastewater management practices at the Lower Columbia Area; 2) evaluate the compliance status of the Lower Columbia Area with respect to Federal and state water pollution regulations and U.S. Department of Energy (DOE) Orders; 3) evaluate the water pollution control practices with respect to industry-accepted best management practices (BMPs); and 4) evaluate the compliance status of the drinking water supply with respect to Federal regulations.

The general approach to the surface water Audit included discussions with BPA staff; review of BPA documents, procedures, correspondence, and other records; and observations of Lower Columbia Area facilities and activities. Information collected from these activities was evaluated with respect to applicable Federal and state regulations and DOE Orders, as identified in Table 3-3, and current industry BMPs.

Facilities in the Lower Columbia Area generate sanitary wastewater and stormwater. These wastewaters are discharged to publicly owned treatment works (POTW), septic systems, and storm drains as discussed below.

Sanitary wastewaters are generated at all Lower Columbia Area facilities routinely occupied by employees. Facilities such as the Ross Complex, which are within municipal sewage treatment districts, discharge sanitary wastewaters to POTWs. Remote facilities, such as North Bonneville Substation, discharge sanitary wastewaters to septic systems. Very small, unoccupied facilities, such as Acton, do not have sanitary facilities. There are no on-site sanitary wastewater treatment units in the Lower Columbia Area other than the septic systems.

Stormwater runoff is generated at all facilities. Various types of stormwater management systems are employed. At some facilities, such as the Ross Complex, Troutdale Substation, and Acton Substation, the stormwater drainage systems include oil/water separators and oil-stop valves to capture oil which may be spilled to the surface. At other facilities, such as North Bonneville Substation, the storm drainage system discharges to the surface with no treatment to collect spilled oil. Some facilities, such as Camas Substation, have no stormwater collection system. Stormwater is generally discharged to the soil surface or the nearest surface water body. The only on-site treatment of stormwater is the oil/water separators and oil-stop valves previously mentioned. None of the stormwater outfalls have National Pollutant Discharge Elimination System (NPDES) permits.

TABLE 3-3
LIST OF APPLICABLE SURFACE WATER
REGULATIONS/REQUIREMENTS/GUIDELINES

<u>Regulations/ Requirements/ Guidelines</u>	<u>Section/Title</u>	<u>Authority</u>
DOE Order 5400.1	General Environmental Protection Program	DOE
40 CFR 112	Water Pollution Prevention	EPA
40 CFR 122	National Pollutant Discharge Elimination System (NPDES)	EPA
WAC 173-216	State Waste Discharge Permit Program	Ecology
WAC 173-220	National Pollutant Discharge Elimination System Permit Program	Ecology
OAR 340-45 and 340-47	Oregon Water Pollution Control Regulations	DEQ
40 CFR 141/142	National Primary Drinking Water Regulations	EPA
40 CFR 143	National Secondary Drinking Water Regulations	EPA

Drinking water is provided to Lower Columbia Area facilities by public water supplies or from on-site wells. Well water is treated at all sites by chlorination and at some sites by softening.

A total of five surface water findings, three compliance findings and two BMP findings, were identified in the Lower Columbia Area. The compliance findings deal with NPDES permitting of stormwater outfalls, inadequate spill prevention, control, and countermeasure (SPCC) Plans, and response to leaks of polychlorinated biphenyl (PCB)-containing oil and mineral oil. BMP findings deal with monitoring of surface water and effluents, and with secondary containment.

3.3.2 Findings

SW/CF-1 Determination of Need for National Pollutant Discharge Elimination System Permit

Performance Objective: Title 40 Chapter 122.1 of the Code of Federal Regulations (40 CFR 122.1) requires an NPDES permit for the point source discharge of pollutants to waters of the United States unless the discharge is exempted. Under 40 CFR 122.26, permits are not required, prior to October 1992, for discharges composed entirely of stormwater. This exemption does not apply to:

- Discharges associated with industrial activities.
- Discharges which the U.S. Environmental Protection Agency (EPA) has determined contribute to violation of water quality standards.
- Discharges which EPA has determined are significant contributors of pollutants.

Finding: Point source surface water discharges from some BPA Lower Columbia Area facilities may require an NPDES permit in compliance with 40 CFR 122.

Many of the facilities within the Lower Columbia Area have storm sewers which may be industrial and significant pollutant point source discharges to waters of the United States and which are not permitted under NPDES.

Some of the stormwater systems in the Lower Columbia Area may be considered to be associated with industrial activities. At the Ross and Troutdale Substations, for example, the storm sewer system is part of the oil spill control system. These systems have sources other than those typically associated with nonindustrial activities.

Storm sewer systems in the Lower Columbia Area have the potential to be a significant source of pollutants. Previous sampling of the oil/water separators in the Ross Complex storm sewer system has

shown the presence of such toxic and hazardous substances as PCB, pentachlorophenol, toluene, and methyl ethyl ketone (see Finding SW/BMP-1). In addition, the washdown racks in the Ross Garage, the main floor sump in the garage, and a sink in Building Z-922 were noted to be connected to the storm sewer (I-SW-3).

BPA has not requested a formal determination from EPA, Washington Department of Ecology (Ecology), or the Department of Environmental Quality (DEQ) concerning the applicability of NPDES permit requirements to stormwater discharges from facilities in the Lower Columbia Area. However, an internal assessment of the Ross Complex with respect to compliance with the Clean Water Act concluded that a permit would not be required until October 1992 (SW-7) since BPA considers Lower Columbia Area point source discharges to be exempted under 40 CFR 122.26. Given the uncertainty over permit application, a formal determination should be requested from regulatory agencies.

The causal factor for this finding appears to be policy implementation. DOE has established the policy of complying with applicable environmental regulations, but BPA has not implemented this policy by requiring a formal determination of whether an NPDES permit is required for point source discharges in the Lower Columbia Area.

SW/CF-2

**Inadequate Development and Implementation of the
Spill Prevention, Control, and Countermeasure Plan**

Performance Objective: 40 CFR 112 requires all facilities which store more than 1,320 gallons of oil aboveground and which could discharge oil to navigable waters of the United States to have a written SPCC Plan which has been reviewed and certified by a registered professional engineer. This plan must include an evaluation of the predicted direction, rate of flow, and total quantity of oil which could be released; a description of equipment/structures for spill containment and diversion; and procedures for spill prevention and response. As part of the requirements for implementing the SPCC Plan under 40 CFR 112.7, facilities must provide appropriate containment and/or diversion structures or equipment to prevent discharged oil from reaching navigable waters.

Finding: The Lower Columbia Area has not developed or implemented SPCC Plans required by 40 CFR 112 for all facilities which have the potential to discharge oil to navigable waters.

A number of facilities within the Lower Columbia Area, such as the Ross Complex, Troutdale Substation, North Bonneville Substation, Acton Substation, and Camas Substation, appear to require SPCC Plans because of the amount of oil in storage and the potential for release to navigable waters. These facilities have not, however, written and implemented SPCC Plans meeting the requirements of 40 CFR 112.

The documents used as SPCC Plans at Lower Columbia Area substations were reviewed during the Audit and were found to generally contain the information required by 40 CFR 112. However, their organization was somewhat confusing in that they did not appear to follow a formal outline. Some of the information (e.g., telephone numbers) was outdated and the plans contained conflicting spill reporting requirements in a Standard, Procedure, and Information (SPIF) (SW-38) and an internal memo dated 1986 (SW-39). In addition, the plans had not been reviewed and certified by a professional engineer.

The secondary containment and spill control structures at facilities within the Lower Columbia Area do not appear adequate to meet requirements for implementation of SPCC Plans (also see Finding SW/CF-3). The North Bonneville and Camas Substations lack secondary containment. The Troutdale Substation relies on the use of drainage systems and oil-stop valves. However, these valves have not worked properly in the past (I-SW-9). The Ross Complex relies on the use of oil/water separators to prevent any off-site release. These separators are ineffective for contaminants which are denser than water. Such contaminants (e.g., trichloroethane) are present at the Ross Complex. Additionally, the configuration of spill containment structures was such that it allowed significant areas to be contaminated if a release were to occur, prior to containment (see Finding SW/BMP-2). A program of sampling and monitoring has not been implemented to determine the effectiveness of SPCC controls (see Finding SW/BMP-1).

BPA is aware of deficiencies in SPCC Plans and has performed a field appraisal of spill containment and prevention throughout the Lower Columbia Area (SW-17, SW-19). BPA has implemented a program to evaluate all facilities to identify those requiring SPCC Plans. Recently, BPA has prepared a prototype SPCC Plan to assist in preparation of site-specific plans and to ensure that these plans are of consistent format and content and address all requirements of 40 CFR 112. BPA is also currently evaluating facilities to identify those which require secondary containment and to prioritize secondary containment upgrades (I-SW-7).

The apparent causal factors which led to the development of this finding are inadequate policy implementation and risk assessment; the requirements of 40 CFR 112 were not followed as a result of BPA's resource commitment to areas of greater perceived risk.

SW/CF-3 Inadequate Response to Oil Leaks, Weeps, and Drips

Performance Objective: Leaking PCB equipment must be identified as part of normal inspections and leaks must be promptly contained and/or removed as a goal of the Memorandum of Agreement (MOA) between BPA and EPA (IWS-34). In addition, BMPs recommend that leaks, weeps, and drips of non-PCB oil from oil-filled equipment should be contained and repaired in a timely manner to minimize the potential for release to the environment.

Finding: Leaks, weeps, and drips of PCB and PCB-contaminated oil and non-PCB oil from oil-filled electrical equipment in the Lower Columbia Area are not contained or repaired in a timely manner in accordance with the MOA and BMPs, respectively.

A large amount of oil-filled electrical equipment, such as transformers, circuit breakers, and bushings, exists throughout the Lower Columbia Area. During inspections of the Ross, Troutdale, North Bonneville, and Camas Substations, equipment was observed which had oil drips and weeps. It appeared that many leaks had occurred over a long time, as evidenced by heavily stained equipment, concrete, and soil underlying the equipment, and oil pooled on the surfaces of some equipment pads. At the Camas Substation, customer equipment adjacent to BPA property was also noted to be leaking.

Response to the leaks and drips varied, but was uniformly inadequate. At Troutdale, absorbent material had been placed under one dripping transformer; however, it appeared that this material had been in place for a long period as evidenced by heavy staining. At the North Bonneville and Camas Substations, no actions had been taken to reduce the impacts to the environment or to fix active leaks/weeps from transformers and bushings. Positive actions to ensure containment, such as placement of drip pans, were not implemented at any of the sites (see Finding SW/BMP-2).

The causal factors leading to this finding appear to be inadequate policy implementation and risk assessment; procedures for identifying and correcting spills exist but are not properly implemented. Additionally, it appears that the risk is improperly assessed by management as not being great enough to require timely containment and repair. Also, supervisors are apparently not stressing to their employees the importance of controlling releases to the environment.

SW/BMP-1 Inadequate Environmental Monitoring Program for Surface Water

Performance Objective: Sites that use, generate, release, or manage significant pollutants or hazardous materials should have an effluent monitoring program and an environmental surveillance program to determine the effects of site activities on surrounding natural resources as a BMP. Environmental monitoring and surveillance will become a requirement under DOE Order 5400.1, Chapter 4, in November 1991.

Finding: BPA's Lower Columbia Area does not have a program for monitoring liquid effluents, including sanitary and stormwater discharges, and for monitoring surface water quality in accordance with BMPs.

The Ross Complex and the substations visited are a representative cross-section of the area's facilities, and the problems identified

in this finding reflect the potential surface water problems throughout the area.

At the Ross Complex, discharges of stormwater effluents are released from the Ross drainage systems to Cold Creek and Burnt Bridge Creek. Since the Ross Complex uses and handles hazardous materials, including PCB and trichloroethane, the potential exists for release of these hazardous materials into the stormwater. Results of past water, sediment, and oil sampling from oil/water separators at the Ross Complex (SW-22, SW-23, SW-33, I-SW-5) indicate the potential for discharges of hazardous materials into both Cold Creek and Burnt Bridge Creek. Additionally, one documented sediment sample detected 121 parts per billion (ppb) of PCB in Cold Creek sediments (SW-1).

Although there appears to be evidence of contaminant releases to surface water through point source stormwater discharges, the Lower Columbia Area has no program to monitor the stormwater discharges from the Ross Complex (see Finding SW/CF-1).

A similar situation exists at each of the substations inspected during the Audit. The drainage system at the Troutdale Substation is also part of the spill containment system and has the potential to receive hazardous materials. This system discharges into a ditch which eventually reaches the Columbia River (I-SW-9). The effluent from the system is not monitored but was sampled during the Preliminary Assessment (PA). At the North Bonneville Substation, the drainage system discharges onto the surface adjacent to a lake which eventually drains to the Columbia River. There is no containment system at this substation and any hazardous material spills could be released directly from the drainage system (I-SW-10). At the Camas Substation, there is no drainage system or spill control system. Any hazardous material spills could run off the site and potentially reach Camas Slough or the Columbia River. At the Acton Substation, stormwater drains into an oil/water separator prior to discharge to a drainage ditch leading to the Columbia River (I-SW-8).

In addition to surface water discharges, liquid effluents from some Lower Columbia Area facilities are also discharged to municipal wastewater treatment plants and septic systems. No characterization of these effluents has been performed, nor is there a monitoring program for them.

The only program of regular environmental monitoring conducted within the Lower Columbia Area is monitoring for herbicide residues in areas where herbicides are applied. This program has been ongoing for approximately the last 15 years.

BPA has recognized the need for a plan to deal with water pollution issues, and has provided for action in the Operations, Maintenance, and Replacement 10-Year Plan to identify outfalls and the materials entering them (SW-2).

The apparent causal factors that led to the development of this finding are inadequate policy implementation and/or risk assessment. BPA appears to have determined the risk to be low and committed resources to higher priorities.

SW/BMP-2 Lack of Positive Secondary Spill Containment Systems

Performance Objective: In accordance with BMPs, spill containment systems should provide positive secondary containment around the source of a spill to facilitate cleanup and minimize the amount of contamination resulting from a spill or release. Secondary containment systems typically consist of engineered structures such as berms or dikes placed around the source of potential spills. The BMP is to design these systems to contain the largest expected spill, with additional capacity for rainwater. Positive release controls within these structures, such as locking valves, are provided to allow accumulated rainwater to be released if it is determined to be uncontaminated.

Finding: Engineered spill containment systems in the Lower Columbia Area do not employ positive means to contain spills at the source in accordance with BMPs.

Spill control systems were observed at the Ross Complex and at four of the six substations visited during the Audit: Acton, Longview, Ross, and Troutdale. The remaining two substations (Camas and North Bonneville) had no secondary containment (see Finding SW/CF-2). The secondary containment system is necessary to reduce the possibility of releases to the environment from oil tanks, transformers, circuit breakers, and other oil-filled equipment.

Where secondary controls do exist at the substations, they are incorporated into the storm drainage systems. Spills flow by gravity to the drainage systems which have oil/water separators and/or oil-stop valves to trap oil. The separators or valves may be located some distance from the source of spills, as noted at four substations visited (see Finding SW/CF-3), so that considerable contamination of surface soil, subsurface soil, and/or the storm sewer may occur before the spilled oil is captured. In addition, the separators or stop valves may not capture all released contaminants (see Finding SW/CF-2).

BPA has previously identified deficiencies in spill containment. As part of the Operations, Maintenance, and Replacement 10-Year Plan, facilities are being prioritized for upgrades in spill containment (SW-1) (see Finding SW/CF-2).

The causal factor for this finding appears to be inadequate policy implementation of the SPCC requirements (see Finding SW/CF-2). The ineffective design of the secondary spill containment systems allows unnecessary surface and subsurface contamination. In addition, there is potentially an inappropriate perception of risk

by BPA upper management which has allowed the ineffective secondary containment problem to exist.

3.4 Groundwater

3.4.1 Overview

The purpose of the groundwater portion of the Environmental Audit of the Bonneville Power Administration (BPA), Ross Complex, Acton, North Bonneville, North Bonneville Annex, Troutdale and Camas was to evaluate both the programmatic and technical status of groundwater protection and monitoring as it related to applicable regulations, industry guidance, and best management practices (BMPs). Applicable regulations include the requirements of U.S. Department of Energy (DOE) Orders and Washington Administrative Code (WAC) regulations. Industry guidance includes publications developed as part of both the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) programs by the U.S. Environmental Protection Agency (EPA), and BMPs are current practices in industry and government programs. At the time of the Audit, the Department of Environmental Quality (DEQ) was compiling regulations and requirements concerning groundwater monitoring programs (i.e., monitoring wells); however, no official regulations are currently in place.

The general approach to the groundwater assessment included interviews with BPA staff; review of Preliminary Assessment (PA), Site Investigation (SI), and draft Remedial Investigation/Feasibility Study (RI/FS) reports; and examination of site documents. Additionally, on-site tours were conducted to verify the information gathered from the assessment. The data and information collected from these activities were evaluated with respect to Federal and State of Washington regulations and DOE Orders, as identified in Table 3-4.

The hydrology and hydrogeology underlying all of the BPA facilities visited during the Audit have been insufficiently studied to determine the range and duration of apparent dynamic conditions. Of the five facilities visited, only two (Ross Complex and Troutdale) have begun groundwater investigations.

The focus of the Audit was directed at the Ross Complex; thus, the following discussion concerns only the Ross Complex.

The stratigraphic sequence beneath the Ross Complex consists of a complexly layered sequence of Pleistocene sands, silts, and clays overlying the consolidated to semi-consolidated sandy gravel Miocene-Pliocene aged Troutdale Formation. Two perched-water zones, which at least partially discharge into a small surface stream (Cold Creek), were encountered in the Pleistocene sediments.

TABLE 3-4
LIST OF APPLICABLE GROUNDWATER
REGULATIONS/REQUIREMENTS/GUIDELINES

<u>Regulations/ Requirements/ Guidelines</u>	<u>Section/Title</u>	<u>Authority</u>
DOE Order 5400.1	General Environmental Protection Program	DOE
WAC 173-160	Minimum Standards for Construction and Maintenance of Wells	Ecology
Chapter 18.104 RCW	Water Well Construction Act (1971)	Ecology

Water level measurements from wells completed in the Troutdale aquifer reveal a sharp 70-foot decrease in water level elevation from the eastern portion of the site to the western portion. Further investigation is required to aid interpretation of the local groundwater flow directions and determine the physical controls influencing the sharp decrease in water level across the site.

Groundwater quality in the Pleistocene alluvium and Upper Troutdale aquifer at the site has been evaluated in previous studies. The available data indicate that volatile organic compounds (VOCs) are present in perched-water zones in the eastern portion of the site and in the Upper Troutdale aquifer in the western portion of the site. Eight monitoring wells have been installed at the site, although one (MW-3B) is unusable. However, the site does not have a groundwater sampling program. Both groundwater and surface water have been identified as potential pathways of contaminant migration. Additionally, the two creeks at the site have the added complexity of being capable of potentially contributing contamination from off-site.

An expanded monitoring well network is in the planning stage (draft RI/FS Work Plan), and is focused toward the following activities: 1) to further characterize the site; 2) to determine the nature and extent of contamination in waste units and various environmental media; 3) to better define potential contaminant pathways and environmental and human risks; and 4) to narrow the range of remedial alternatives to be considered during the FS.

The findings that follow this overview detail the specific aspects of the BPA groundwater monitoring and characterization program that do not meet compliance requirements. There are three compliance findings for groundwater at the BPA Ross Complex. One deals with the lack of a fully developed Groundwater Protection Management Plan, one with required well abandonment, and the final one with proper surface protection requirements for resource protection wells. Parallel findings appear in the Management and Surface Water sections of this report.

3.4.2 Findings

GW/CF-1 Lack of Groundwater Protection Management Plan

Performance Objective: DOE Order 5400.1 (III)(4)(a) states that each Head of Field Organization shall prepare a Groundwater Protection Management Plan that includes, for each site, the following: 1) documentation of the groundwater regime with respect to quantity and quality; 2) design and implementation of a groundwater monitoring program to support resource management and comply with applicable environmental laws and regulations; 3) a management program for groundwater protection and remediation, including specific Safe Drinking Water Act (SDWA), RCRA, and CERCLA actions; 4) a summary and identification of areas that may be

contaminated with hazardous substances; 5) strategies for controlling sources of these contaminants; 6) a remedial action program that is part of the site CERCLA program required by DOE Order 5400.4; and 7) decontamination and decommissioning programs and other remedial programs contained in DOE directives. This plan shall be completed no later than 18 months after the effective date of the DOE Order dated November 9, 1988. The plan shall be reviewed annually and updated every 3 years.

Finding: BPA does not have a fully developed Groundwater Protection Management Plan developed for the Lower Columbia Area as required under DOE Order 5400.1 (III)(4)(a).

Five investigations have been conducted at the Ross Complex: a PA, an SI, a soil gas survey and groundwater quality assessment, a preliminary hydrogeologic investigation, and a Vancouver Well Field Special Study. In addition, groundwater samples have been collected from on-site and off-site drinking water wells. BPA has a draft RI/FS Work Plan for the Ross Complex, but has not received approval to initiate the RI. Although BPA has initiated source identification efforts and a preliminary hydrogeologic investigation at the Ross Complex, it has not fully developed a Groundwater Protection Management Plan for the Ross Complex nor has it developed a Groundwater Monitoring Plan for each of the remaining substations and maintenance districts within the Lower Columbia Area.

Plans, permits and other technical documents such as those associated with compliance with SDWA, RCRA, and CERCLA may be used in whole or in part to satisfy this requirement. However, they must include all aspects of the Groundwater Protection Management Plan as discussed under the performance objective. In the Operations, Maintenance and Replacement 10-Year Plan, BPA states that it will address the development of a Groundwater Protection Management Plan.

The causal factors that may have contributed to this finding are inadequate policy implementation, training, and supervision. BPA has not fully developed a Groundwater Protection Management Plan that satisfies DOE Order 5400.1 (III)(4)(a), and not all BPA staff have had proper training with regard to DOE Orders, as evidenced by the lack of familiarity with requirements of DOE Order 5400.1. Additionally, it appears that these personnel are not directed by an experienced supervisor who is cognizant of the groundwater requirements of DOE Order 5400.1.

GW/CF-2

Unusable Wells Lack Proper Abandonment

Performance Objective: WAC 173-160-415, "Abandonment of Wells", states that any well which is unusable, whose use has been permanently discontinued, that is in such disrepair that its continued use is impractical, or that is an environmental, safety, or public health hazard shall be abandoned. Wells that were not

constructed in accordance with WAC 173-160, or wells which are abandoned to allow the placement of potential sources of contamination within 100 feet of them shall be abandoned in accordance with WAC 173-160-415(2)(a). If it can be verified that a resource protection well was constructed in accordance with WAC 173-160, then it shall be abandoned in accordance with WAC 173-160-560.

Finding: Three discontinued wells on the Ross Complex have not been abandoned in accordance with WAC 173-160-415, -560.

There are three wells on the Ross Complex site whose use has been permanently discontinued, the MW-3B well, the "Mystery" well, and the "Ghost" well. These wells are potentially an environmental, safety, and public health hazard and are required to be properly abandoned according to the Washington Department of Ecology (Ecology) regulation WAC 173-160-415.

Monitoring well MW-3B is a resource protection well installed during an SI (May 1987 - May 1988) in the Heat Line area that is incapable of yielding representative groundwater samples. The "Mystery" well is a 4-inch steel casing with a 1/4-inch steel plate bolted on the end that rises above the ground surface between the Fog Test Chamber and N.E. Ross Street. The casing extends approximately 40 feet below ground with no apparent use. The "Ghost" well issue was disclosed to the Audit team during site personnel interviews (I-GW-6). The well's exact location, history, and purpose are unclear; however, it is thought to be located beneath the Dittmer Building.

Ross Complex site personnel identified the three problem wells (I-GW-6), and the draft RI/FS (GW-1) addresses the abandonment of MW-3B. The November 1987 BPA Environmental Appraisal Report addressed the "Mystery" well and recommended that it be properly abandoned. In the Operations, Maintenance and Replacement 10-Year Plan, BPA states that it will address proper abandonment of unusable wells.

The causal factors that contributed to this finding appear to be inadequate policy implementation of the State of Washington well abandonment regulations in that there are no formal written BPA procedures in place for well abandonment. Additionally, training in Washington State well abandonment regulations for responsible personnel is inadequate or nonexistent since the BPA personnel responsible for abandonment of wells are not cognizant of the regulations regarding proper well abandonment.

GW/CF-3

Groundwater Well Surface Protective Measures

Performance Objective: According to industry practices, well(s) completed aboveground shall be protected from damage by one of the following methods: a) three metal posts at least 3 inches in diameter, and set in concrete, shall be installed in a triangular array around the casing and at least 2 feet from it, and each post

shall extend at least 3 feet above and below the ground surface; a reinforced concrete pad may be installed to prevent freeze/thaw cracking of the surface seal. When a concrete pad is used, the well seal shall be part of the concrete pad. As of May 5, 1988, monitoring wells are subject to WAC 173-160-510, "Design and Construction -- Surface Protective Measures," which states that wells completed aboveground shall be protected from damage. The regulations also stipulate that if the well is damaged, the well protection measures and casing shall be restored as prescribed by the WAC regulations.

Finding: Two of the seven CERCLA groundwater monitoring wells at the BPA Ross Complex have surface protective measures which are not in accordance with current industry practices and State of Washington regulation WAC 173-160-510.

Seven groundwater monitoring wells have been installed at BPA's Ross Complex. During the Audit team's site tour, these seven monitoring wells were physically inspected. Of the seven wells, MW-3A and MW-3B were found to lack adequate surface protection. These two wells are in an area of heavy traffic and the protective casing on MW-3A exhibits signs of damage, most likely resulting from accidental collisions. The area around MW-3A has also undergone resurfacing and as a result the concrete pad installed to prevent freeze/thaw and serve as part of the well seal has been removed. Since MW-3B is in the same general area, it is also susceptible to accidental damage because of a lack of adequate surface protection. WAC 173-160-510 became effective May 5, 1988 and MW-3A is still in need of repair.

The causal factors that contributed to this finding appear to be inadequate policy implementation caused by inadequate training, supervision, and procedures. The BPA personnel responsible for CERCLA wells are not cognizant of monitoring well requirements and acceptable practices partially as a result of inadequate training. Additionally, it appears that these personnel are not directed by experienced supervisors who are cognizant of monitoring well requirements and acceptable practices. Furthermore, there is a lack of adequate BPA procedures (Standards, Procedures, Instructions, Information) dealing with monitoring well requirements and acceptable practices.

3.5 Waste Management

3.5.1 Overview

The purpose of the waste management portion of the Bonneville Power Administration (BPA) Lower Columbia Area Audit was to 1) evaluate the current management practices for hazardous and nonhazardous waste at the Lower Columbia Area; 2) evaluate the compliance status of the Lower Columbia Area with respect to Federal and state waste management regulations and U.S. Department of Energy (DOE) Orders; 3) evaluate the waste management practices with respect to industry-accepted best management practices (BMPs); and 4) evaluate the compliance status of Lower Columbia Area underground storage tanks with respect to Federal regulations.

The general approach to the waste management portion of the Audit included discussions with BPA staff; review of BPA documents, procedures, correspondence, and other records; and observations of Lower Columbia Area facilities and activities. The information collected from these activities was evaluated with respect to applicable Federal and state regulations and DOE Orders, as identified in Table 3-5, and current industry BMPs.

The Lower Columbia Area generates hazardous and nonhazardous solid wastes. These wastes are accumulated and stored on-site and disposed of off-site, as discussed below.

Hazardous wastes generated in the Lower Columbia Area consist primarily of wastes resulting from maintenance and construction activities. BPA has identified 33 separate dangerous/hazardous and polychlorinated biphenyl (PCB) waste streams which compose the majority of dangerous/hazardous wastes and PCB wastes generated in the Lower Columbia Area (management of PCB wastes is discussed in Section 3.6). Dangerous/hazardous waste streams include various solvent wastes, laboratory wastes, corrosive wastes, metal-containing waste, and PCB wastes not regulated under the Toxic Substances Control Act (TSCA).

Three groups of facilities in the Lower Columbia Area generate dangerous and hazardous wastes. The first group consists of small substations (e.g., Acton, North Bonneville, and Camas); managed by BPA as small-quantity generators or conditionally exempt generators, these substations do not have U.S. Environmental Protection Agency (EPA)/state ID Numbers. The second group is the hazardous waste coordination sites, consisting of area maintenance district substations (e.g., Troutdale). These sites are managed by BPA as fully regulated generators with less-than-90-day accumulation areas and do have EPA/state ID Numbers. The last group is the Ross Complex. The Ross Complex is regulated as a dangerous waste generator, transporter, and storage facility.

TABLE 3-5
LIST OF APPLICABLE WASTE MANAGEMENT
REGULATIONS/REQUIREMENTS/GUIDELINES

<u>Regulations/ Requirements/ Guidelines</u>	<u>Section/Title</u>	<u>Authority</u>
DOE Order 5400.3	Hazardous and Radioactive Mixed Waste Program	DOE
WAC 173-303	Dangerous Waste Regulations	Ecology
OAR 340-100 through 340-110 and 340-120	Hazardous Waste Management Rules	DEQ
40 CFR 260-271	Hazardous Waste Management Regulations	EPA
40 CFR 280	Underground Storage Tanks	EPA

A Part B Dangerous Waste Permit Application for the Ross Complex was submitted to EPA and Washington Department of Ecology (Ecology) in 1988. A final permit has not been issued yet and the facility operates under interim status.

Wastes generated at small substations are generated and managed by area maintenance staff from the hazardous waste coordination sites. These wastes are transported by area maintenance staff to the hazardous waste coordination site. There, these wastes, as well as wastes generated at the site, are accumulated on-site for less than 90 days and then transported to the Ross Complex. The Ross Complex receives and stores wastes from all area maintenance districts in BPA, not just those in the Lower Columbia Area. The Ross Complex also stores wastes generated on the Ross Complex. Wastes generated at the Ross Complex are accumulated on-site in less-than-90-day accumulation areas and satellite accumulation areas before being transferred to the interim status storage facilities. Wastes are periodically shipped from the Ross Complex storage facilities to permitted off-site treatment, storage and disposal (TSD) facilities.

At the Ross Complex, dangerous and hazardous wastes are stored in Buildings 482, 814, and 772. Building 482 is used to store most of these wastes. Storage is in the building and in temporary storage sheds outside the building. Building 814 is used to store drums of soil contaminated with pentachlorophenol; no other hazardous wastes are stored there. Building 772 is used to store PCB wastes, including waste oils containing less than 50 parts per million (ppm) PCB, which are regulated as dangerous waste in Washington, as well as PCB wastes regulated under TSCA. The Ross Complex also has one on-site hazardous waste recovery unit. Lacquer thinner wastes from the paint shop are recovered on-site in a solvent still and reused.

Nonhazardous wastes include oils and solvents not regulated as dangerous, hazardous, or TSCA waste and refuse. Nonregulated waste motor oil is removed by an off-site waste oil reclaimer. Nonregulated solvent is removed by a vendor. Refuse is accumulated on-site in dumpsters and collected by a private contractor for off-site disposal. High-grade wastepaper is accumulated on-site at the Ross Complex for collection by an off-site recycle contractor. The Ross Complex also accumulates waste lumber for collection by an off-site recycle contractor.

There are a total of 44 underground storage tanks in the Lower Columbia Area. These tanks, ranging in volume from 500 to 10,000 gallons, are used to store diesel fuel, regular and unleaded gasoline, and waste oil.

A total of four waste management findings were identified in the Lower Columbia Area. These findings address management of dangerous and hazardous wastes by generators prior to receipt at the Ross Complex storage facilities (i.e., waste characterization,

waste accumulation, and land disposal restriction [LDR] notifications) and reporting of releases of dangerous wastes and hazardous substances.

3.5.2 Findings

WM/CF-1 Inadequate Characterization of Hazardous Waste

Performance Objective: Washington Administrative Code (WAC) 173-303-070 requires all generators of solid waste to determine whether the waste is designated as a dangerous waste. Oregon Administrative Rules (OAR) 340-102-011 require all generators of solid waste to determine whether the waste is a hazardous waste. Title 40 Chapter 268.7 of the Code of Federal Regulations (40 CFR 268.7) requires generators to analyze wastes to determine whether they are subject to LDRs. BPA Procedure P64094-HW-01 requires generators to properly identify waste. These determinations must be performed by the generator so that the wastes can be managed in compliance with applicable regulations.

Finding: Some solid wastes generated within the Lower Columbia Area are not properly evaluated by the waste generator and the BPA Chemistry Laboratory to determine if they are dangerous or hazardous wastes, as required under WAC 173-303-070 and OAR 340-102-011, or LDR wastes, as required under 40 CFR 268.7.

A number of solid wastes are generated by activities conducted by BPA, both on the Ross Complex and at substations investigated during the Audit. Some of the wastes generated in Washington are regulated as dangerous wastes under WAC 173-303 and some of the wastes generated in Oregon are regulated as hazardous wastes under OAR 340-102-011. Some of these dangerous/hazardous wastes are also subject to Federal LDRs under 40 CFR 268 (see Finding WM/CF-3). These wastes must be designated by the generator in order for applicable regulatory requirements, if any, to be determined. Wastes generated at off-site locations must be designated prior to transport from the point of generation in order for applicable manifesting and transportation requirements to be determined. The contents of the waste containers must be known so that a proper shipping name can be assigned as required by U.S. Department of Transportation regulations.

To assist in the designation of these wastes, BPA has identified 33 specific waste streams (WM-19) that comprise those typically generated at BPA. Profiles have been prepared for each of these streams, providing the information necessary for the generator to properly manage the wastes.

During the inspection of the Ross Complex, wastes were observed which had not been properly designated. In the Maintenance and Construction Services Material Storage Area, approximately 10 drums were observed which were unlabeled and whose contents were unknown (I-WM-1). These wastes were believed by BPA staff to have been

generated by off-site maintenance activities. The contents of these drums had been sampled to determine whether they were dangerous wastes. Also in this area was a 5-gallon can labeled only as "Bad Solvent."

Outside Building Z-772 were drums which had apparently been delivered from off-site maintenance areas. A number of these drums were labeled with waste stream identification labels indicating that they contained a waste not regulated by either the Resource Conservation and Recovery Act (RCRA) or TSCA. These drums were also labeled, however, with "Hazardous Waste" labels, "PCB" labels, and "ORM E" labels. Based on the label information, it is impossible to determine the correct designation of the waste, how it should be managed, and what the appropriate emergency response actions are. BPA Utilization and Disposal staff indicated that these drums were awaiting "cleanup" and often came from off-site with incorrect labels requiring verification of contents (I-WM-8).

At several locations throughout the Ross Complex there are drums of drill cuttings and purge water from installation of monitoring wells during the 1987 Site Inspection. The contents of these drums have not been designated to determine whether they are dangerous wastes. Sampling had been performed at the time of the site inspection, but the drum labels were destroyed before the contents could be designated. The contents have recently been resampled and will be designated (I-WM-1).

Wastes were observed in shops which appeared to be dangerous wastes but which had not been designated as such. Solvent-contaminated rags which should be designated as dangerous wastes under WAC 173-303-802 were being disposed of as nonregulated solid waste. Paint wastes which may be toxic dangerous wastes under WAC 173-303-084(5) were also being managed as solid waste.

In addition, the analytical method used by the BPA Chemistry Laboratory to determine whether solid wastes are dangerous wastes due to persistent halogenated hydrocarbon content (i.e., total organic halogen) is not the method required under WAC 173-303-110 and could result in incorrect designation of dangerous wastes.

The causal factor for this finding appears to be inadequate implementation of dangerous and hazardous waste regulations and BPA hazardous waste procedures. Training in the use of the BPA hazardous waste procedures and in implementation of the state dangerous and hazardous waste regulations is ineffective. Additionally, quality assurance (QA) and reviews to help ensure BPA personnel's compliance with BPA and RCRA procedures, including laboratory analyses, also appear to be lacking.

Performance Objectives: WAC 173-303-200 and OAR 340-102-034 allow dangerous and hazardous wastes to be accumulated on-site without a permit for less than 90 days provided certain requirements are met. These requirements are as follows: an inspection schedule for the area must be prepared; the area must be inspected weekly; personnel managing wastes in accumulation areas must be trained according to a hazardous waste training program; the area must meet emergency preparedness and prevention requirements and have a contingency plan and emergency procedures; containers of waste must be in good condition and must be kept closed except when waste is added; and containers of waste must be labeled as dangerous or hazardous waste (in Washington, containers must also be labeled to identify the risks associated with the waste). These requirements also apply to satellite accumulation areas in Washington. Satellite accumulation areas in Oregon must only comply with container management requirements (i.e., container condition and closure). Waste accumulation under WAC 173-303-200 and OAR 340-102-034 is allowable only for wastes generated on-site. To be considered as having been generated "on-site," wastes cannot be transported on roads accessible to the general public.

Finding: Dangerous and hazardous waste accumulation areas, transportation practices, and contingency and emergency procedures within the Lower Columbia Area do not comply with all applicable requirements under WAC 173-303-200 and OAR 340-102-034.

Dangerous and hazardous wastes are generated and accumulated throughout the Lower Columbia Area. Several accumulation areas were inspected at the Ross Complex within the State of Washington (I-WM-1, I-WM-4, I-WM-5). Not all containers of waste at accumulation areas were properly labeled, and formal weekly inspections were not conducted at any areas visited during the Audit. Additionally, the Ross Complex hazardous waste contingency plan and emergency procedures do not specifically identify or address accumulation areas. Moreover, open solvent waste containers were found at two accumulation areas at the Ross Complex.

Wastes generated at Lower Columbia Area substations are transported to maintenance district substations such as Troutdale, where they are accumulated for shipment to the Ross Complex. Because these wastes are transported on public roadways, they cannot be accumulated at substations, such as Troutdale, which are not permitted storage facilities under state dangerous and hazardous waste regulations.

The primary causal factor for this finding appears to be inadequate implementation of the state dangerous and hazardous waste regulations; BPA procedures (WM-19, WM-24) do not address all the applicable requirements of dangerous and hazardous waste regulations. Training on the waste management procedures is

ineffective, and past audits and reviews have not identified all the problems addressed in this finding.

WM/CF-3 Lack of Notifications and Certifications Required for Hazardous Wastes Subject to Land Disposal Restrictions

Performance Objectives: 40 CFR 268.7(a) requires generators of hazardous wastes subject to LDRs to provide notifications of applicable treatment standards and prohibitions, or certifications that the wastes can be land disposed.

Finding: Hazardous wastes subject to LDRs are generated by BPA and are transported to the Ross Complex without the notifications and/or certifications required under 40 CFR 268.7(a).

Under 40 CFR 268.7(a)(1), shipments of wastes which are subject to LDR treatment standards or prohibitions must be accompanied by a notification of the applicable standards or prohibitions or a certification that they meet applicable standards. The BPA areas generate hazardous wastes which are subject to LDRs, including treatment standards and disposal prohibitions. These wastes, which are generated at substations, are shipped to the Ross Complex for storage. The waste shipments are not accompanied by the required notifications or certifications. However, wastes which are shipped from Ross to off-site treatment and disposal facilities do contain the necessary notifications and certifications.

The causal factor for this finding appears to be inadequate policy implementation of 40 CFR 268.7. BPA is aware of the requirement for LDR notifications and certifications, as evidenced by its inclusion of notifications and certifications with waste shipments leaving the Ross Complex, but has not included them in the hazardous waste procedures (WM-19). Additionally, training appears to be lacking since the requirements for LDR notification/certification are not implemented.

WM/CF-4 Inadequate Procedures for Reporting Spills and Releases of Dangerous Wastes and Hazardous Substances

Performance Objective: Section 145 of the Washington Dangerous Waste Regulations (WAC 173-303) requires any person responsible for a spill or discharge to the environment of a dangerous waste or hazardous substance (unless otherwise permitted) to report such releases to the appropriate state and local authorities, including Ecology, regardless of the quantity released.

Finding: BPA's Lower Columbia Area does not have adequately written procedures for reporting spills and releases of dangerous wastes or hazardous substances in the State of Washington which are in accordance with the Washington Dangerous Waste Regulations.

Interviews with BPA personnel and reviews of program implementation documents including Standards, Procedures, and Information (SPIFs), contingency plans, and guidances (IWS-25; WM-22, 24, 30) show that no adequate procedures have been written and incorporated into these documents to implement the spill reporting requirements of WAC 173-303-145. Existing procedures address only spills of hazardous substances that exceed an EPA reportable quantity or other Federal standard and require being reported to the National Response Center. While an informal procedure has been established at the Ross Complex to report spills to local and state authorities, this procedure has not been incorporated into acceptably written policies and procedures concerning spill reporting (I-IWS-4, 9).

BPA personnel indicated that several interpretations of the spill reporting requirement for the State of Washington had been provided at various times, but that the opinion as to whether such reporting was required was not conclusive.

The apparent causal factors for this finding are inadequate policy implementation of WAC 173-303-145 and inadequate procedures for reporting spills to the appropriate local and state authorities. Additionally, there is a lack of training and guidance with regard to the requirements of the State of Washington Dangerous Waste Regulations and a lack of supervision, which may contribute to the lack of adequate procedures.

3.6 Toxic and Chemical Materials

3.6.1 Overview

The toxic and chemical materials portion of the Environmental Audit evaluated the status of Bonneville Power Administration's (BPA's) Lower Columbia Area with regard to applicable regulations of the Toxic Substances Control Act (TSCA); the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); and U.S. Department of Energy (DOE) Orders. The use, storage, and disposal of polychlorinated biphenyls (PCBs) and pesticides were compared to regulations promulgated under TSCA and FIFRA, respectively. The storage and handling of chemicals were assessed for compliance with current accepted industry practices. The specific regulatory requirements against which BPA was assessed are presented in Table 3-6.

This assessment was accomplished through discussions with BPA personnel; a review of written policies, procedures, internal inspection reports, and inventories, and external audit reports; and inspection tours of the distribution and support facilities.

At the time of preparation of the 1989 PCB Annual Inventory Report, BPA had 33 PCB Transformers and about 124,318 PCB Large Capacitors in use systemwide. Servicing and preparation for disposal of PCB electrical equipment (as well as PCB-contaminated and non-PCB electrical equipment) are performed at the Ross Complex. One building (Z-772) at Ross is designated for PCB items in storage for disposal. Some servicing of oil-filled electrical equipment is performed at Longview, Spokane, and Covington.

Herbicides are employed by BPA at substations and transmission line rights-of-way. All herbicide materials for use by BPA are received at the Ross Complex and distributed to the area offices for use. Herbicide applications at the Ross Complex are accomplished by licensed contractors while applications at substations and transmission line rights-of-way are accomplished by licensed BPA employees from the Transmission Line Maintenance Department. Operation of the herbicide program for BPA is performed in accordance with written procedures.

The toxic and chemical materials audit identified four compliance findings and two best management practice (BMP) findings. The compliance findings concern PCB recordkeeping, PCB labeling and storage of PCB items for disposal, and storage and handling of herbicides. The BMP findings involve storage for re-use of PCB Large Capacitors, and analysis of and leaks from PCB bushings.

TABLE 3-6
LIST OF APPLICABLE TOXIC AND CHEMICAL MATERIALS
REGULATIONS/REQUIREMENTS/GUIDELINES

<u>Regulations/ Requirements/ Guidelines</u>	<u>Section/Title</u>	<u>Authority</u>
DOE Order 5482.1B	Environmental Safety and Health	DOE
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions	EPA
40 CFR 165	Subpart C - Pesticides and Containers	EPA

3.6.2 Findings

TSCA/CF-1 Inaccurate and Inadequate Information in the Annual Polychlorinated Biphenyls Reports

Performance Objective: Title 40 Chapter 761.180(a) of the Code of Federal Regulations (40 CFR 761.180[a]) requires that each Annual PCB Report contain:

- The total number of PCB Transformers and total weight in kilograms of PCBs contained in the transformers that remain in service at the end of the year.
- The total number of large high- or low-voltage PCB Capacitors remaining in service.
- The total weight in kilograms of any PCBs or PCB items in PCB containers removed from service, placed into storage for disposal, and placed into transport for disposal along with the respective dates, the identification of container contents, and the name and location of the initial storage or disposal facility (for the 1990 report and following years, substantially more information is required on disposal activities).

Finding: The total number of PCB Transformers and the total weight of PCBs in PCB Transformers and PCB containers have not been included in past Annual PCB Reports as required by 40 CFR 761. Additionally, the number of PCB Capacitors reported in the Annual PCB Reports is unsubstantiated, which is not in keeping with the requirements of 40 CFR 761.

Information identified in 40 CFR 761 as required in PCB Annual Reports, such as the number of PCB Transformers and the weight of PCBs in PCB Transformers and in PCB containers, was not in any of the reports prepared for 1984 through 1989. Most of this information is available from the documentation attached to the reports; however, the data have not been extracted, summarized and stated as required by the regulations.

BPA has recently (July 6, 1990) been issued a Notice of Significant Noncompliance (NOSN) by the U.S. Environmental Protection Agency (EPA), Region X, related to reporting deficiencies in the 1988 and 1989 Annual PCB Reports. A total of six violations were noted, which include the items above, and one of the violations includes the "Total number of PCB Large High- or Low-Voltage Capacitors" among the missing information.

In response to the NOSN, BPA has prepared a revised 1989 report for comment by EPA. (A revised 1988 report is also required.) The revised report contains the missing information; however, some of the data appear questionable. For example, the number of PCB Transformers remaining in service throughout BPA (33) includes some

placed in storage for disposal, and the calculated total weight of PCBs in the PCB Transformers appears inaccurate.

The number of PCB Capacitors was included in the reports, so that this part of the NOSN appears to be an oversight on EPA's part. However, the number of PCB Capacitors in the 1989 report, "Approximately 124,318" appears unsupported and is probably inaccurate for the following reasons: until 1989, the PCB Capacitors in storage for reuse were not included in the total number of PCB Capacitors reported "in service"; Troutdale Substation staff disagreed on whether the capacitors in various site locations were in storage for reuse or disposal; and it did not appear that an accurate count of PCB Capacitors at the Troutdale Substation was available. Ross management acknowledge that an accurate count of PCB Capacitors in the BPA system has never been achieved (TSCA-17).

Because of a change in information required on PCB disposal, the reporting year for 1989 has been stipulated as January 1, 1989 to February 5, 1990. This was necessary because the new reporting requirements were not effective until February 5, 1990. (The 1990 reporting year will be February 6, 1990 to December 31, 1990.) This has led to possible discrepancies in much of the 1989 Annual PCB Report information, including the number of capacitors, since part of the information is supplied for the 1989 calendar year while other information is supplied for the January 1, 1989 to February 4, 1990 period.

The Annual PCB Reports for past years have included much information that is not required by the regulations, such as detailed information on PCB-contaminated Transformers. This practice prompted EPA to note in the NOSN that "There is no problem with including more information than is necessary on the Annual Reports. However, the required information should be separately identifiable from additional, non-required information which has been added."

The causes of this finding appear to be policy implementation, in that the policy stated in 40 CFR 761.180(a) has never been adequately implemented; procedures, in that no procedures have been established for gathering and identifying pertinent information required for reporting; and audits/reviews/oversight, in that previous reviews have not successfully resolved the reporting discrepancies.

TSCA/CF-2 Improper Storage for Disposal of PCB Items

Performance Objective: Storage of PCB items for disposal is allowed in an area near the designated storage for disposal (SD)

facility under the following conditions, as specified in 40 CFR 761.65(c):

- Certain items can be stored for up to 30 days from the date of removal from service provided the date of removal is noted on the container.
- Certain other equipment can be stored outside only when the storage facility has immediately available unfilled storage space equal to 10 percent of the volume of equipment stored outside.

Finding: BPA is storing PCB items for disposal outside the designated SD building under conditions not permitted by 40 CFR 761.65(c).

All PCB items removed from service at BPA facilities are shipped to the Ross Complex for processing for disposal. Building Z-772, designated by BPA as the SD facility, contains a 1,685-square-foot area dedicated to PCB storage and to processing of PCB items.

During the Audit, observations noted that approximately 20 large PCB Capacitors and several drums containing various PCB items were stored outside. In both instances, space within the SD facility was immediately available to accommodate the items. Inspection of the drums stored outside the SD facility showed that, according to dates of removal from service as indicated on the drums, and an examination of the manifests, more than 30 days had elapsed between removal from service and receipt at Ross.

It is frequently difficult to determine whether the 30-day time limit or the 10-percent space availability is applicable. While the 10-percent space availability provision might allow outside storage when a very large shipment has been received, these instances would be expected to be infrequent. In the event of items belatedly (i.e., period from date of removal from service has exceeded 30 days) shipped to Ross from other BPA locations, none of the 30 days allowed will be available, before a final storage location must be assigned.

BPA has been aware that the PCB SD facility is undersized, and a larger building was recommended in the 1986 appraisal (WM-20). Additional storage capacity is being pursued (I-TSCA-29).

The causes of this finding appear to be policy implementation and resources. The policy stipulated in the regulations is not rigorously implemented and it appears that the 1,685 square feet of space does not represent an adequate resource for the scale of disposal activities normally found at the Ross Complex.

Performance Objective: 40 CFR 761.40 requires a standard 6-inch by 6-inch label on PCB electrical equipment. In addition, BPA Substation Maintenance has a program to analyze and tag (with a small brass tag containing the PCB concentration) all transformers. The program to analyze and tag all oil-filled equipment was established in 1982 by a memorandum from D.L. Johnson, Chief, Substation Maintenance Branch-OHS to all Area Substation Maintenance Superintendents (TSCA-15). While somewhat informal in nature, this program appears to be accepted by all involved with oil-filled equipment.

Finding: Two PCB Transformers were not labeled in accordance with 40 CFR 761.40, and some tanks containing oil with less than 500 parts per million (ppm) PCBs were improperly labeled with a PCB label. Additionally, some transformers were found without BPA tags or with incorrect or unverifiable PCB concentrations on the tags, and one transformer was found with no analysis of the PCB content as required by the BPA memorandum on oil-filled equipment.

This finding is based on audit inspection tours of several substations and other locations of PCB or PCB-containing equipment and on interviews with cognizant staff members.

During a visit to the North Bonneville Substation, transformer number PT-1301 was observed without the required label, despite being shown by analysis to contain 936 ppm of PCBs. According to BPA personnel, a label was attached to this transformer before the completion of the Audit.

While nearly all the oil-filled equipment observed during the Audit contained tags indicating PCB concentration, several transformers were found either without tags, with tags containing unverifiable data, or with tags containing incorrect data. For example, a large (1,740 gallons of oil, serial no. 3142902) transformer at the High Current Test Building, Z-329, was untagged. Records were found subsequent to the Audit that show this transformer was analyzed on October 9, 1985 and contained 7 ppm of PCB. Many transformers were found during visits to the Troutdale, North Bonneville, and Acton Substations without tags, but records were produced showing the results of sampling, all of which were below 500 ppm. Also, in the Ampere Building storage room east of the Engraving Laboratory, a transformer (TS-1934) was found with two tags, one indicating a PCB concentration of 769 ppm and the other indicating a concentration less than 1 ppm. Writing on the transformer indicated that it had been retrofilled in March 1987. No record could be found to support the lower concentration, and no record could be found to indicate that the retrofilling had taken place. Another transformer (T-0632), observed in the Ross Warehouse area, had three tags, showing concentrations of 101 ppm, 1 ppm, and 4.2 ppm. Sampling data were found to support the 101 and 4.2 ppm tags but not the 1 ppm tag. In addition, data showed that retrofilling took

place between the times of the 101 and 4.2 ppm sampling. A possible explanation for this case and the previous one is that the transformers were tagged with the concentration of the retrofill oil before the retrofilling actually took place. If this practice continues there will be no way to tell from inspection of the tags the correct concentration of the contents. Since transformer number TS-1934 apparently still has 769 ppm of PCBs, it is incorrectly labeled in that it had no 6- by 6-inch PCB label. A proper label was attached during the Audit. Ross personnel have stated that this unit has now been placed in storage for disposal.

The causes of this finding appear to be inadequate policy implementation and inadequate audits/reviews. The policy for PCB Transformer labeling had not been implemented at North Bonneville, and the BPA policy to analyze and tag all oil-filled transformers has not been fully implemented at many locations. Previous audits and reviews had not revealed these discrepancies.

TSCA/CF-4 Inadequate Operation and Oversight of Herbicide Application and Storage Program

Performance Objective: BPA Transmission Maintenance Standard S63041-02, HERBICIDE STORAGE REQUIREMENTS, requires that pesticide materials be stored in such a way that doors to the storage facility be kept locked to prevent unauthorized entry and that all items used for handling and storage of pesticides which might be used for other purposes be labeled "contaminated with pesticides".

BPA Transmission Maintenance Standard S63047-02, HERBICIDE DISPOSAL, requires that empty, triple-rinsed containers should be punctured or crushed and disposed of in a sanitary landfill or disposal site.

Finding: Equipment potentially contaminated with herbicides at Buildings Z-814 and Z-687 is not labeled as being "contaminated with pesticides"; empty and unwanted herbicide containers at Building Z-687 are not properly handled; and an open doorway was observed at Herbicide Storage Building Z-687. These issues are not in compliance with the applicable BPA standards.

Inspections of Buildings Z-814 and Z-687 showed the following nonconformances with BPA herbicide storage requirements:

- The movable equipment used to transport herbicide materials in Building Z-814 and the herbicide spray vehicle parked adjacent to Building Z-687 were not labeled in accordance with BPA standards.
- In Building Z-687 there were empty containers on the ground and on pallets adjacent to the building. Several of the containers had visible chemical staining on the outside, and none of the containers were punctured as required by BPA standards.

- The door of the Lower Columbia Area Herbicide Storage Building Z-687 was open and the building was unattended, which is not in accordance with BPA standards.

The apparent causal factors that led to the development of this finding include inadequate policy implementation and training in that the BPA herbicide procedure was not properly implemented and the personnel responsible for herbicide preparation and application were not properly trained (I-FIFRA-5) in the relevant BPA procedures.

TSCA/BMP-1 Improper Storage of Spare PCB Capacitors

Performance Objective: Current industry practice recommends that facilities with PCB equipment in storage for re-use follow the regulatory specifications for storage for disposal as closely as practical. Of paramount importance is protection from weather, storage on a diked impermeable pad, and documented periodic inspections. Number 5 of the Valdez Principles, "Risk Reduction", supports this objective to minimize the environmental risk to employees and communities and is endorsed by BPA.

Finding: Spare PCB Large Capacitors at several BPA Lower Columbia Area locations are not stored in accordance with BMPs.

During Audit inspections, large numbers of spare PCB Capacitors were noted at the Troutdale Substation, and the High-Voltage Test Laboratory and the Fog Test Chamber at the Ross Complex. In each instance, the stored capacitors were outside, exposed to the weather, and on permeable pads. An attachment to the 1989 Annual PCB Report contains a list of 864 spare capacitors stored at 16 locations including Troutdale and the High-Voltage Test Laboratory, but does not list the PCB Capacitors stored at the Fog Test Chamber. BPA personnel stated that the storage conditions observed at Ross and Troutdale are typical of those at other locations (I-TSCA-19). No formal policy on inspection of spares has been issued. The draft of BPA's Environmental Manual Chapter 956, Polychlorinated Biphenyl Policy/Guidelines (956.4-a) states that "PCB and PCB Contaminated Electrical Equipment must be properly managed, including storage, to insure compliance with applicable Federal and State regulatory requirements, and to minimize or prevent contamination to the environment and risk to human health."

The cause of this finding appears to be policy in that no policy on storage of PCB Capacitors has been developed, resulting from a perception of low risk by BPA management.

TSCA/BMP-2 Lack of Analysis of PCBs in Electrical Bushings

Performance Objective: Current industry practice recommends that oil-filled equipment be analyzed for PCB content to properly assess the risk whenever such equipment leaks, and to assume that the equipment is PCB-contaminated where no analysis is practical so

that high priority will be assigned to leaks of oil of unknown PCB concentration. Although this practice is specified in 40 CFR 761 for most electrical equipment, bushings are addressed only by BMPs.

Finding: Most in-service, oil-filled bushings at BPA have not been analyzed for PCBs, leaks of oil from bushings are not treated as if the leaking fluid is PCB-contaminated, and bushings suspected of being PCB-contaminated have not been labeled in accordance with BMPs.

The memorandum establishing the BPA policy to analyze and tag all oil-filled electrical equipment (TSCA-15) exempts bushings "in the field" from the requirement. Since most bushings have lengthy use before service is required, few "in-service" bushings at BPA have been analyzed for PCBs.

Much of the data that have been collected on bushings are the result of analyses performed prior to disposal of the bushings. These data indicate that most bushings manufactured prior to 1979 are PCB-contaminated (i.e., 50 to 500 ppm with most below 300 ppm) while bushings manufactured after that date are very low in PCB content (I-TSCA-28).

During visits to the Troutdale and North Bonneville Substations, the Audit team observed that a number of bushings had oil leaks. In most cases it is difficult to determine if the bushing itself is leaking or if the source of the oil is the transformer since the release frequently occurs at the connection of the bushing and the transformer. However, at North Bonneville, oil is dripping from the top of a bushing, which clearly identifies the bushing as the source of the leak. BPA personnel were equating bushing PCB content with that of the transformer and therefore assumed that these leaks should receive low priority because the transformer oil was low in PCB content. No attempt has been made to analyze any of the leaking fluids, and no attempt has been made to label bushings made before 1979 as PCB-contaminated.

The lack of cleanup of oil leaks at BPA substations is addressed in Finding SW/CF-3.

The causes of this finding appear to be lack of policy and inadequate audits/reviews. No policy has been developed to cover analyses or labeling of in-service bushings or treatment of leaks from bushings. Previous audits and reviews have failed to disclose this discrepancy.

3.7 Quality Assurance

3.7.1 Overview

The purpose of the quality assurance (QA) portion of the Environmental Audit was to evaluate the Bonneville Power Administration (BPA) QA Program's application to the generation of sound, verifiable, and traceable analytical chemistry data. Table 3-7 lists the specific regulations, requirements, and guidelines used to evaluate BPA during this assessment.

The scope of this review included discussions and interviews with BPA Chemical Laboratory staff; a review of BPA QA policies, procedures, analytical methods, laboratory records, and analytical contracting agreements; and an evaluation of BPA QA practices against data quality objectives.

Data generated by the Chemistry Laboratory at the Ross Complex are used in support of BPA environmental activities. These activities include analytical support for cleanup actions, entailing mainly polychlorinated biphenyl (PCB) analyses of soil and wipe samples, and characterization of BPA wastes. The majority of the analytical work involving the analysis of environmental monitoring samples and samples in support of remedial actions is performed by off-site contract laboratories.

There are four compliance findings in the QA section, including the lack of a documented QA Program for BPA environmental analyses performed at the Ross Complex, lack of Lower Columbia Area contractor laboratory and field remediation QA audits or appraisals, lack of BPA QA requirements in purchase orders for contractor laboratories, and inadequate QA and procedural deficiencies for the Lower Columbia Area environmental sampling activities.

3.7.2 Findings

QA/CF-1 Lack of a Documented QA Program for BPA Environmental Analyses Being Performed at the Ross Complex

Performance Objective: U.S. Department of Energy (DOE) Order 5700.6B requires that QA activities and the requirements for those activities be identified in program plans and that QA activities be implemented using written procedures and instructions appropriate to the activities being performed.

The elements of a QA program plan are set forth in DOE Order 5400.1, Chapter IV and Interim Guidelines and Specifications for Preparing QA Project Plans (EPA-QAMS-005/80).

TABLE 3-7
LIST OF APPLICABLE QUALITY ASSURANCE
REGULATIONS/REQUIREMENTS/GUIDELINES

<u>Regulations/ Requirements/ Guidelines</u>	<u>Section/Title</u>	<u>Authority</u>
DOE Order 5400.1	General Environmental Protection Program	DOE
DOE Order 5700.6B	Quality Assurance	DOE
EPA/600/06	Handbook for Analytical Quality Control in Water and Wastewater Laboratories	EPA
EPA/QAMS-005/80	Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans	EPA
EPA/SW846	Chemical and Physical Analysis of Solid Waste	EPA
BPA Procedure ELMC-002	Hazardous Waste Analysis Plan	BPA
BPA Quality Assurance Program Manual	QAP - 1.1	BPA
BPA Quality Assurance Program Manual	QAP - 3.4	BPA
BPA Specification Quality Program Requirements	EMQ - 1.3	BPA

Finding: There is no documented QA Program for the laboratory analyses performed at the Ross Complex in support of BPA environmental programs.

The Chemistry Laboratory at the Ross Complex performs environmental analyses, such as characterizing waste and determining the presence of PCBs in soils, without a documented QA Program that describes the procedures and activities required to produce defensible, traceable analytical data as required by DOE Order 5700.6B (I-QA-1). As a result, aspects of quality assurance/quality control (QA/QC) which provide a basis of defensibility and traceability for analytical data, as set forth in DOE Order 5400.1 and QAMS-005/80, have not been instituted.

Aspects of a QA/QC Program that have not been instituted include:

- Organizational responsibility
- Program design
- Procedures
- Field quality control
- Laboratory quality control
- Human factors
- Recordkeeping
- Chain-of-custody procedures
- Audits
- Performance reporting
- Independent data verification
- Training.

Additionally, lack of familiarity by BPA staff with QA/QC protocols prevents adequate and timely correction of QA/QC nonconformances brought to BPA's attention by contractor laboratories. This lack of familiarity with accepted QA/QC protocols and the resulting impacts from QA/QC protocol nonconformances have led to inactivity by BPA staff when notified of nonconformances. An example of this is a situation which arose in December 1989, when BPA was notified that holding times for seven volatile organics samples were exceeded (QA-9). BPA staff members were not aware of the consequences of exceeded holding times and subsequently, no corrective action was taken to ensure compliance in the future (I-IWS-1).

The apparent causal factors that led to this finding appear to be inadequate policy implementation with regard to implementing the requirements of DOE Order 5700.6B, the lack of procedures developed to implement the DOE Order and the lack of appraisals or audits of the Chemistry Laboratory that would determine that a documented QA Program is not in place, and human factors whereby cognizant staff misjudged the applicability of the DOE QA Order to environmental issues.

QA/CF-2

Lack of BPA Contractor Laboratory and Lower
Columbia Area Field Remediation QA Audits or
Appraisals

Performance Objective: DOE Order 5700.6B requires that external QA audits be performed and that causes of significant deficiencies be identified and corrected to prevent recurrence.

BPA Specification EMQ-1.3, QUALITY PROGRAM REQUIREMENTS, Section 4-1.3, requires that a contractor's QA Program be subject to review by BPA until it meets the requirements set forth by BPA and has been approved. Thereafter, the QA Program shall be subject to resurvey on a 2- to 3-year basis or at any time it is not accomplishing its objectives. Quality surveys and quality program surveillance will be conducted by the BPA QA Officer.

Finding: Formal audits and/or appraisals of the contractor laboratories performing environmental analytical services for the Ross Complex and other BPA locations have not been performed nor have formal audits been accomplished for cleanup actions currently under way.

Approximately 80 percent of the environmental analytical work for the Ross Complex is performed by off-site contractor laboratories and these laboratories have not been audited by BPA (I-QA-1). Additionally, formal audits of contractor laboratories supporting ongoing cleanup activities and formal audits of field activities associated with ongoing cleanups have not been performed. As a result, any deficiencies such as nonconformances with sampling or analytical procedures or exceedance of holding times have not been identified. Failure to identify and correct nonconformances such as these adversely impacts the defensibility and quality of the analytical data.

The apparent causal factors that led to this finding appear to be a lack of policy implementation with regard to appraisals and audits, lack of training in BPA Specification EMQ-1.3 which requires a BPA review of contractor's QA Programs, and human factors in that BPA staff were not aware of the applicable QA/QC requirements nor of the potential data quality impacts from QA/QC nonconformances.

QA/CF-3

Lack of BPA QA Requirements in Purchase Orders for
Contractor Laboratories

Performance Objective: DOE Order 5700.6B requires that QA activities be implemented by DOE organizations and contractors using written procedures and instructions appropriate to the activities being performed.

Finding: Purchase orders for environmental analytical services from contract laboratories do not include requirements detailing

applicable QA procedures and instructions for the activities to be performed.

Purchase orders for analytical services from several contractor laboratories were reviewed and none contained descriptions of applicable and required QA procedures and instructions. As a result, environmental monitoring analyses are being done without QA guidance from BPA and thus the data may not be defensible and traceable. Examples of missing QA requirements include:

- specific acceptable methods of analysis and the required limits of detection for each method, and
- a detailed description or specific citation that fully defines the specific QA protocols and QA documentation deliverables required.

The apparent causal factors that led to the development of this finding appear to be a lack of policy implementation in that the requirements of DOE Order 5700.6B are not being implemented; there are inadequate procedures to implement the DOE Order and there are barriers and controls which do not allow for applicable DOE Orders to reach the BPA Laboratory Manager.

QA/CF-4 Inadequate BPA Chain-of-Custody for Environmental Samples

Performance Objective: BPA Materials Branch Technical Procedure ELMC-002, HAZARDOUS WASTE ANALYSIS PLAN, states that the Washington Department of Ecology (Ecology) has chain-of-custody procedures that should be used where the hazardous waste samples might be used in compliance-related litigation.

DOE Order 5700.6B requires that QA activities be implemented using written procedures and instructions appropriate to the activities to be performed.

Finding: BPA personnel responsible for hazardous waste and PCB sampling do not employ chain-of-custody documentation in accordance with the BPA Hazardous Waste Management Plan.

The Utilization and Disposal Department personnel involved in sampling liquid hazardous waste and the personnel from the Environmental Protection Section of the Operations, Maintenance & Construction Division responsible for sampling soils suspected of containing PCBs do not use chain-of-custody forms to document custody of samples (I-QA-9, I-QA-10). As a result, documented custody of hazardous waste and PCB soil samples cannot be established and, if challenged, the integrity of the samples could not be defended.

The apparent causal factor which led to the development of this finding appears to be inadequate policy implementation in that the

DOE Order has not been fully implemented and procedures for BPA sampling of hazardous wastes and suspected areas of soil contamination have not been developed. Additionally, BPA personnel have not been trained in the need for explicit controls on sampling.

3.8 Inactive Waste Sites

3.8.1 Overview

The purposes of the inactive waste sites portion of the Environmental Audit of the Bonneville Power Administration (BPA) Lower Columbia Area were to evaluate 1) management of inactive waste sites located at the Ross Complex and substations in the Lower Columbia Area; 2) management and conduct of studies to respond to cleanup of these sites; 3) compliance with Federal, state, and U.S. Department of Energy (DOE) requirements concerning inactive waste sites, such as the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), also known as the Superfund, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Resource Conservation and Recovery Act (RCRA) Corrective Action provisions, and DOE Order 5400.4; and 4) adherence to the provisions of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), under Title III of SARA.

Currently, the BPA Lower Columbia Area has been involved in a number of response actions of inactive waste sites, including contamination investigation and cleanup activities at the Longview Substation, preliminary assessment (PA) and cleanup activities at the Troutdale Substation, and a remedial investigation/feasibility study (RI/FS) at the Ross Complex. The Ross Complex was listed on the National Priorities List (NPL) on November 21, 1989. In February 1990, BPA signed a Memorandum of Agreement (MOA) with the U.S. Environmental Protection Agency (EPA) (see Appendix E), in which actions were established for the conduct of environmental appraisals, audits and Toxic Substances Control Act (TSCA) inspections; testing, evaluation, and remediation of BPA facilities with regard to TSCA and CERCLA; and coordination and consultation with EPA. In March 1990, BPA, EPA, and the Washington Department of Ecology (Ecology) signed a Federal Facility Agreement (FFA) (see Appendix E) for the Ross site in which milestones and compliance activities were established for the conduct of investigation and remediation at the Ross Substation.

The general approach to the inactive waste sites Audit included interviews with BPA and regulatory agency (EPA and Ecology) staff, review of EPCRA and environmental restoration documents and records, and on-site verification. The information collected from these activities was evaluated with respect to Federal and state regulations and DOE Orders, as identified in Table 3-8.

The inactive waste sites Audit identified three compliance findings and no best management practice (BMP) findings. The compliance findings are concerned with compliance to DOE Order 5400.4, adherence to the requirements of the National Oil and Hazardous Substances Pollution Contingency Plan (also known as the National Contingency Plan [NCP]) and CERCLA, and lack of an EPCRA Program.

TABLE 3-8
LIST OF APPLICABLE INACTIVE WASTE SITES
REGULATIONS/REQUIREMENTS/GUIDELINES

<u>Regulations/ Requirements/ Guidelines</u>	<u>Section/Title</u>	<u>Authority</u>
Public Law 99-499	Superfund Amendments and Reauthorization Act of 1986	EPA
40 CFR 300	National Oil and Hazardous Substances Pollution Contingency Plan	EPA
40 CFR 302	Designation, Reportable Quantities, and Notification	EPA
40 CFR 355	Emergency Planning and Notification	EPA
40 CFR 370	Hazardous Chemical Reporting: Community Right-to-Know	EPA
DOE Order 5400.1	General Environmental Protection Program	DOE
DOE Order 5400.4	Comprehensive Environmental Response, Compensation, and Liability Act Requirements	DOE
DOE Order 5400.2A	Environmental Compliance Issue Coordination	DOE
DOE Order 5482.1B	Environment, Safety, and Health Appraisal Program	DOE
DOE Order 5484.1	Environmental Protection, Safety, and Health Protection Information Reporting Requirements	DOE
DOE Order 5700.6B	Quality Assurance	DOE
Federal Facility Agreement under CERCLA 120	U.S. EPA and the Washington Department of Ecology and BPA Federal Facility Agreement	EPA/ Ecology
Memorandum of Agreement, February 1985	Memorandum of Agreement Between BPA and EPA regarding PCB Cleanups	EPA

TABLE 3-8 Continued
LIST OF APPLICABLE INACTIVE WASTE SITES
REGULATIONS/REQUIREMENTS/GUIDELINES

<u>Regulations/ Requirements/ Guidelines</u>	<u>Section/Title</u>	<u>Authority</u>
WAC 173-340-303	Washington State Model Toxics Control Act Cleanup Regulations	Ecology
Memorandum	Delegation of Authority and Responsibilities for Implementing Environmental Programs (DOE Order 5400.1) in the Lower Columbia Area	Lower Columbia Area Manager

3.8.2 Findings

IWS/CF-1 Inadequate Implementation of DOE Order 5400.4

Performance Objective: DOE Order 5400.4, CERCLA Requirements, states that DOE shall respond to releases of hazardous substances at facilities under DOE jurisdiction in accordance with the provisions of CERCLA, as amended, as well as the NCP and Executive Order 12580, including both removal and/or remedial actions, as appropriate, regardless of whether the facility is listed on the National Priorities List (NPL). DOE Order 5400.4 states that DOE shall enter into Interagency Agreements (IAGs) and/or FFAs at both NPL and non-NPL sites, as appropriate, for the execution of RI/FSS and remedial actions under the requirements prescribed in DOE Order 5400.2A, Environmental Compliance Issue Coordination, and under Section 120(e) of CERCLA. DOE Order 5400.4 requires that where other corrective action authorities are used (RCRA, TSCA, state laws), DOE needs to ensure that these corrective actions are not inconsistent with the NCP to satisfy CERCLA requirements. In addition, the Lower Columbia Area Manager officially delegates, through a memorandum (IWS-33), to the Area Environmental Coordinator the responsibility and authority to identify significant environmental compliance issues that require resolution and coordination, including compliance agreements, consent orders, MOAs, National Environmental Policy Act/CERCLA/RCRA/TSCA/Clean Water Act compliance strategies, and the documentation thereof.

Finding: BPA Lower Columbia Area personnel are not fully complying with DOE Order 5400.4 and the BPA delegation of environmental authorities memorandum, including the consideration of IAGs and ensuring and documenting that cleanup actions are not inconsistent with the NCP.

Interviews with BPA personnel, reviews of program implementation documents, and delegation of authorities with regard to DOE Orders indicate that requirements of DOE Order 5400.4 have not been implemented concerning establishment of IAGs and ensuring that cleanups performed under other authorities (TSCA, RCRA, state laws) are not inconsistent with CERCLA and the NCP. Examples include the following:

- IAGs have not been pursued or established for several cleanup activities currently being undertaken under authorities other than CERCLA at the Troutdale and Longview Substations. BPA personnel indicated that appropriateness of an IAG to either of these facilities was not considered (I-IWS-10). While charged with the responsibility for determining the appropriateness of IAGs to these actions (IWS-33), personnel in charge of the cleanups indicated that IAGs are not being pursued, and are only entered into on larger cleanups at other agencies' (e.g., EPA, Ecology) requests (I-IWS-8, 10).

- BPA Lower Columbia Area personnel are not taking steps to ensure and document that cleanup activities being performed under authorities other than CERCLA are not inconsistent with the NCP and CERCLA requirements. Lower Columbia Area personnel with this responsibility indicated that consistency with the NCP has not been considered part of cleanup determinations, and that there are no plans to integrate NCP considerations into the decisionmaking processes (I-IWS-10). Similar corrective actions being undertaken with regard to approximately nine other locations in the Lower Columbia Area were not examined; however, because responsibilities for these sites are charged to the same personnel, compliance with regard to DOE Order 5400.4 is a concern at these sites.
- Site investigation and cleanup activities being performed by BPA Lower Columbia Area personnel are not consistent with CERCLA and the NCP (see Finding IWS/CF-2).

The apparent causal factor for this finding is inadequate policy implementation of DOE Order 5400.4. There is a lack of training on the existence, importance, and applicability of the DOE Orders, and there may be administrative barriers or human factors that prevent the DOE Orders from reaching BPA personnel responsible for implementing DOE Orders. In addition, it appears that these personnel are not directed by an experienced supervisor who is cognizant of DOE Order 5400.4 requirements for remedial activities.

IWS/CF-2

Inadequate Implementation of the National Contingency Plan

Performance Objective: DOE Order 5400.4, CERCLA Requirements, states that DOE shall respond to releases of hazardous substances at facilities under DOE jurisdiction in accordance with the provisions of CERCLA, as amended, as well as the NCP and Executive Order 12580, and shall include both removal and/or remedial actions, as appropriate, regardless of whether the facility is listed on the NPL. An MOA between BPA and EPA requires BPA to assess potential hazardous waste sites using priorities and guidelines established in the NCP and that these assessments will consider applicable files and records, interviews with current and former employees, information on past practices and current operations, waste streams, use and disposal of hazardous substances, and site characterization. The MOA also requires BPA to develop plans for remedial actions at sites on a prioritized schedule based upon risk assessment that utilizes criteria and information in the NCP, and provide information to state and local government, the local communities and local media in connection

with studies and response actions undertaken by BPA. The NCP establishes procedures and standards for the cleanup of releases and hazardous waste sites, including:

- Reporting and notification of hazardous waste sites.
- A framework for PAs and SIs, including inventory of contaminants, identification of sources, and characterization of site conditions.
- Community relations and public participation activities.
- Emergency, removal, and remedial activities, including alternatives to be analyzed under each.
- Cleanup standards, including those specified by other applicable or relevant and appropriate standards.
- Selection of remedies and performance of remedial actions.
- Followup and verification at completion of the remedial activities.

DOE Order 5400.4 also requires that corrective actions taken under other authorities (TSCA, RCRA, state laws) be performed in a manner that is not inconsistent with the NCP.

Finding: BPA Lower Columbia Area personnel have not conducted investigation and cleanup activities fully in accordance with the requirements of the NCP and the MOA. Cleanup activities performed under other authorities have not been conducted in a manner that is consistent with the NCP.

Cleanups being conducted under CERCLA authorities and cleanups being carried out under other authorities are not following all aspects of the MOA, the NCP, and CERCLA, including the following examples:

- BPA Lower Columbia Area personnel have not adequately characterized all contaminants that may be present at inactive waste sites under their jurisdiction in accordance with the requirements of the MOA and the NCP. For example, the PA for the Troutdale Substation site concentrates on historical polychlorinated biphenyl (PCB) contamination, but also indicates that 1,1,1-trichloroethane and other solvents were historically and routinely used at the site. Characterization of potential solvent contamination has not been sufficient. While one drinking water well was analyzed for the presence of solvents at a depth of approximately 250 feet, analysis for the presence of solvents was not performed for soils or shallow groundwater underlying the

site where solvents would be expected to be found or from a sample collected at a private well 1/2 mile downgradient from the site from which complaints concerning drinking water quality had been received (IWS-29).

- BPA Lower Columbia Area personnel have not conducted an adequate search for inactive waste sites. The MOA and the NCP require lead agencies to base PAS on readily available information, portions of which are obtained from reviews of historical documents, interviews, and inspection tours of facilities that include a history of waste handling. Interviews with BPA personnel indicated that recently identified contaminant sources exist at the Ross Complex, Troutdale Substation, and other locations that had not previously been reported to EPA under Section 103 of CERCLA and/or which had not been included in existing actions at these sites (I-IWS-4, 6, 8, 10, 11, 12). Specific examples include: 1) historical dumping of 1,1,1-trichloroethane to a drain at the Ross facility, as identified by a former employee during a community relations program; 2) existence of at least one previously unlocated drywell at the Ross Complex; and 3) potential leakage from below-ground fuel oil pipelines abandoned in place at the North Bonneville facility.
- BPA Lower Columbia Area personnel have not implemented community relations and public participation activities at cleanups of inactive waste sites which are not inconsistent with the NCP and in compliance with requirements of the MOA (IWS-34). For example, interviews with BPA personnel indicate that notification of public officials and provision of community participation were not undertaken at cleanups at the Troutdale and Longview Substations (I-IWS-8, 10).

BPA has correctly noted in its Operation, Maintenance, and Replacement 10-Year Plan that not all past spill sites throughout the BPA system have yet been identified (IWS-15). BPA personnel also indicated that an effort to inventory potential drywell locations and other sources of contamination is currently being undertaken.

The apparent causal factor for this finding is inadequate policy implementation of DOE Order 5400.4, in that there are no BPA procedures requiring compliance with NCP requirements in the investigation and cleanup of inactive waste sites. Additionally, there is a lack of training and guidance with regard to the requirements of CERCLA and the NCP, and a lack of knowledgeable supervision or human factors, which are resulting in a disregard for NCP requirements and may be responsible for BPA personnel not performing cleanup activities in a manner not inconsistent with the NCP.

Lack of an Emergency Planning and Community Right-to-Know Act Program

Performance Objective: 40 CFR 355.30 implements Section 302 and 303 of EPCRA (SARA Title III). Section 302 requires "any facility at which there is present an amount of any extremely hazardous substance equal to or in excess of its threshold planning quantity" to notify the state emergency response commission (SERC) that it is a facility subject to the emergency planning requirements of 40 CFR 355.30. Section 303 requires the applicable facility to notify the local emergency planning committee (LEPC) of the name of the facility emergency response coordinator.

40 CFR 370 implements EPCRA Sections 311 and 312. It requires applicable facilities, such as the Ross Complex, to submit a list of hazardous chemicals and extremely hazardous substances at the facility in excess of minimum threshold levels and a Tier I or Tier II form (if requested by the SERC, LEPC, or the fire department with jurisdiction over the facility) to the SERC, LEPC, and jurisdictional fire department.

Finding: The Ross Complex has not implemented an EPCRA Program in accordance with 40 CFR 355.30 and 40 CFR 370.

In 1987, BPA concluded that the sulfuric acid in the substation batteries would be exempt from the SARA Title III notification and hazardous chemical reporting requirements because of an exemption stated in the definition of a hazardous chemical (SARA-2 and SARA-3). However, sulfuric acid is also listed as an extremely hazardous substance and there are no exemptions in the definition of an extremely hazardous substance. Therefore, the sulfuric acid in the substation batteries at the Ross Complex and other BPA substations is not exempt from the SARA Title III notification and hazardous chemical reporting requirements.

The Ross Complex has an amount of sulfuric acid in excess of the threshold planning quantity of 1,000 pounds for sulfuric acid (I-SARA-4). Consequently, the site is required by 40 CFR 355.30 to notify the SERC that it is a facility subject to the emergency planning requirements of 40 CFR 355.30 and to notify the LEPC of the name of the facility emergency response coordinator.

In addition, the amount of sulfuric acid on-site also exceeds the minimum threshold level of 500 pounds for sulfuric acid. Consequently, the site is required by 40 CFR 370 to either submit the Material Safety Data Sheet for sulfuric acid or fulfill the alternative reporting requirements stated in 40 CFR 370.21(b) and a Tier I or Tier II form (if requested by the SERC, LEPC, or the fire department with jurisdiction over the facility) to the SERC, LEPC, and the jurisdictional fire department.

Since other Lower Columbia Area substations have batteries containing sulfuric acid, these substations may also be subject to

the requirements of 40 CFR 355.30 if the quantity is in excess of the threshold planning quantity (1,000 pounds) and the requirements of 40 CFR 370 if the quantity is in excess of the minimum threshold quantity (500 pounds).

The Ross Complex also has an amount of 1,1,1-trichloroethane, a hazardous chemical, in excess of the minimum threshold level of 10,000 pounds for hazardous chemicals (SARA-4) which is not being reported in a listing of chemicals and Tier I reporting for the Ross Complex.

The causal factors for this finding appear to be inadequate policy implementation with regard to the requirements of EPCRA in that there is no BPA procedure on EPCRA reporting, and training of personnel tasked with meeting EPCRA reporting requirements has not been conducted. In addition, no internal EPCRA reviews, which could have identified the need for EPCRA reporting, are performed.

3.9 Management and Appraisals

3.9.1 Overview

The management and appraisal Audit evaluated the status and effectiveness of the Bonneville Power Administration (BPA) management as it relates to ensuring environmental regulatory compliance and implementing U.S. Department of Energy (DOE) policies and objectives within the Lower Columbia Area. The specific performance criteria against which BPA and its Lower Columbia Area management were assessed, in part, include the Recommended Management Performance Objectives and Criteria for Tiger Team Management Assessments (June 14, 1990) and the Environmental Audit Manual.

This Audit was accomplished through interviews and discussions with BPA and Lower Columbia Area personnel; a review of written manuals, policies, procedures, internal reports, and correspondence; and daily consultation with all Audit team discipline specialists.

Environmental responsibilities for the Lower Columbia Area are under the purview of three organizations within BPA: the Assistant to the Administrator for Environment, the Environmental Protection Section, and the Area Operations and Maintenance. The Assistant to the Administrator for Environment is essentially responsible for developing environmental policy, monitoring regulatory developments applicable to BPA, and managing the environmental appraisal program. The Environmental Protection Section, in the Division of Maintenance, provides specialized technical support, prepares and publishes guidance to implement agency policy and directives (SPIFs/standard operating procedures [SOPs]), and develops program plans. Area Operations and Maintenance of the Lower Columbia Area is the line organization responsible for implementation of programs and procedures developed at BPA, negotiation of corrective measures with state and Federal regulatory agencies, and provides required reports to those regulatory agencies.

BPA's Environmental Appraisal Program was established by BPA Manual Chapter 902 in 1984 in accordance with DOE Order 5482.1B. The program consists of a four-tiered approach: internal audit, field appraisal, functional environmental appraisal, and management appraisal. Internal audits are conducted by personnel on-site to verify compliance of all specific environmental regulations at a specific facility. Field appraisals are on-site reviews of specific environmental disciplines conducted by teams comprised of central office personnel and on-site personnel. The functional environmental appraisal is a BPA-wide review led by the Environmental Manager that compiles information and issues from field appraisals and internal audits. Management appraisals are conducted by DOE Headquarters personnel to determine managerial effectiveness in establishing and implementing the DOE Environmental Appraisal Program.

The Audit team focused on the internal audits and field appraisals conducted in the Lower Columbia Area. Internal checklist audits addressing narrow areas of concern with regard to the Resource Conservation and Recovery Act (RCRA) and the Toxic Substances Control Act (TSCA) have been conducted at the Ross Complex over the past year. A 3-year Field Appraisal program has been conducted at the Ross Complex. The 1986 program focused on wastes regulated under RCRA and TSCA. The 1987 program assessed compliance with the Noise Control Act, the Safe Drinking Water Act (SDWA), and the Clean Water Act (CWA). The 1988 program was postponed until 1989 due to the BPA reorganization and included appraisals of TSCA (polychlorinated biphenyls [PCBs] in service), the Clean Air Act (CAA), and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).

There are four findings in the management and appraisal section. Two compliance findings that deal with the lack of a BPA Quality Assurance (QA) Program and inadequacies in the audit program, and two best management practice (BMP) findings that involve concerns regarding the organizational structure of BPA and the adequacy of corrective action procedures.

3.9.2 Findings

MGT/CF-1 Inadequate Environmental Audit Program

Performance Objective: BPA Manual Chapter 902 states that BPA audits and appraisals are to be conducted with sufficient scope and frequency to ensure environmental compliance.

Finding: Audits of environmental activities in the Lower Columbia Area are not conducted with sufficient scope and frequency to ensure environmental compliance in accordance with BPA requirements.

BPA has not developed a comprehensive audit program schedule to conduct audits with sufficient scope and frequency to ensure environmental compliance. Currently, audits are initiated by request and on a "perceived need" basis. However, no advanced schedules are assembled, except for field appraisals, to assess the ongoing status of environmental compliance on a regular and thorough basis.

Through the BPA audit program, internal checklist audits for RCRA and TSCA issues were conducted at the Ross Complex (SA-15, SA-16, SA-17). However, this represents only a small portion of the environmental regulations and none of the DOE Orders which affect BPA activities. Additionally, the internal audits that have been conducted were inadequate in that the audit checklists are incomplete in scope, and some of the checklists used to conduct the audits were not completed.

In addition to the internal audits, several comprehensive field appraisals have been conducted at the Ross Complex since 1986 (SA-4, SA-5, SA-6). The field appraisals addressed the following regulations and media-specific issues:

- RCRA, appraisal date 1986.
- TSCA, appraisal dates 1986 and 1989.
- CAA, appraisal date 1989.
- CWA, appraisal date 1987.
- FIFRA, appraisal date 1989.
- SDWA, appraisal date 1987.
- Groundwater, appraisal date 1987.

Although the field appraisals have addressed more environmental regulations and issues than the internal audits, the Natural and Cultural Resources Protection Acts and Executive Orders have not been assessed, even though the BPA Appraisal/Audit Guidelines contain checklists for these issues. At present, there are no scheduled plans to appraise the compliance status of these regulations and Executive Orders (SA-14).

Despite the comprehensive nature of the field appraisals conducted for specific regulations, the BPA audit program does not span the full scope of environmental regulations and concerns. Significant areas of environmental interest which are not covered by BPA checklists or audits are as follows:

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
- Emergency Planning and Community Right-to-Know Act of 1986.
- Hazardous Materials Storage.
- Quality Assurance/Quality Control.
- Environmental Management.
- DOE Order 5400.1 - General Environmental Protection Program.
- DOE Order 5400.4 - CERCLA.
- DOE Order 5700.6B - Quality Assurance.

It should be noted that the above discussion only concerns audit/appraisal activities at the Ross Complex. There have been a number of environmentally related field appraisals at other Lower Columbia Area facilities. Pursuant to a Memorandum of Agreement with EPA Region X, BPA has conducted approximately 20 "EPA-equivalent" TSCA inspections at some of the Lower Columbia Area substations (SA-19). However, there have been no internal audits

at Lower Columbia Area facilities other than the Ross Complex within the last 5 years (SA-10, SA-11, SA-12, SA-19).

The causal factor for this finding appears to be inadequate policy implementation with respect to following BPA Manual Chapter 902. Additionally, in light of the number of findings identified in this audit of which BPA was not aware, BPA personnel may not have adequately evaluated the risk associated with not developing a comprehensive environmental audit program and not comprehensively assessing environmental compliance on a regular basis.

MGT/CF-2 BPA Lacks an Organizational Quality Assurance Program

Performance Objective: DOE Order 5700.6B requires a QA Plan and Program which establish an independent, institutional coordination and overview function to develop and coordinate QA policies and guidelines.

Finding: BPA has no written corporate QA Plan and has not established an effective, independent QA Program as required by DOE Order 5700.6B.

With the exception of procurement, there is no written QA Plan or QA Program that defines the policies, objectives, and common principles of BPA to ensure quality achievement. The lack of a QA Program has led to deficiencies that directly reflect on inadequacies identified in the following environmental areas: the audit/appraisal program (see Findings MGT/CF-1, MGT/BMP-2); the environmental sampling and analysis program (see Findings QA/CF-1, QA/CF-4); oversight of environmental contractor activities (see Findings QA/CF-2, QA/CF-3); generation of SOPs; and document control activities.

The apparent causal factors that contributed to this finding are the lack of policy implementation in not addressing DOE QA requirements in DOE Order 5700.6B and risk assessment. In view of the number of findings identified by the Environmental Audit team and BPA audit/appraisal teams, the high degree of risk accepted by BPA, for DOE, of not having an established QA Plan and Program, appears excessive.

MGT/BMP-1 Ineffective Organizational Structure

Performance Objective: As a BMP the corporate structure should reflect the strong commitment to environmental excellence and DOE's environmental concerns as indicated in the Secretary's 10-point initiative. In addition, the interface and functional relationships between the line organizations and staff provide environmental support that is well defined and understood.

Finding: The corporate organizational structure of BPA does not reflect a strong commitment to environmental concerns, and the

relationships of environmental organizations are not well defined and understood in accordance with BMPs.

The organizational placement, within the BPA, of the Assistant to the Administrator for Environment results in a lack of ability to interact with other BPA organizations on an equal basis. In addition, this group does not have the necessary training responsibilities or oversight authority to ensure that environmental regulations and concerns are being properly addressed in the line organizations (i.e., Area Offices).

In the Lower Columbia Area, the assignment of environmental activities falls to the Area Environmental Coordinator (AEC) within Area Operations and Maintenance (O&M). This position has almost all environmental responsibilities and authority in the Area; however, it is not afforded the same status as managers with equivalent responsibilities and authority in that same organization.

All the BPA managers interviewed appeared to support, to varying degrees, the changing emphasis on environmental compliance. However, fostering a culture of commitment to environmental issues has not been effectively communicated from BPA to the line organization staffs of the Lower Columbia Area. This was readily apparent at the substations visited by the Audit team, where oil leaks/leaks have gone unchecked and unrepaired for long periods.

While line organizations have correctly been given environmental responsibility for their activities, they have not formalized their programs in concert with standard QA practices. This reflects on the broader concern that BPA does not have a QA Program and has not recognized the need for QA as an integral part of all environmental programs (see Finding MGT/CF-2).

Within the Lower Columbia Area, the responsibilities for implementing environmental programs and activities are not well defined or understood. There is confusion among line management in O&M as to who has the ultimate responsibility for environmental concerns at the Ross Complex. This confusion is reflected in the observed contradictions between those responsibilities written in the job descriptions, those delegated for implementation of DOE Order 5400.1 (MGT-25), and those noted in conversations with cognizant staff at O&M (I-MGT-8, I-MGT-9, I-MGT-10).

It is recognized that BPA is an organization in transition. This is evidenced by recent organizational changes as well as new undertakings and initiatives in the areas of environmental protection and pollution control. However, these commendable efforts have not been effective at meeting recognized and stated organizational commitments to the environment.

The apparent causal factor for this finding is inadequate risk assessment in that BPA has not recognized the high degree of risk

accepted by BPA, for DOE, in not having a strong environmental organization.

**MGT/BMP-2 Inadequate Quality Assurance Practices for
Corrective Actions**

Performance Objective: Standard QA guidelines state that the review and approval of audit-generated corrective actions plans and the determination of closure on an audit finding be solely in the purview of the auditor(s) to ensure quality.

Finding: At BPA, the review and approval of audit-generated corrective actions plans and the determination of closure on an audit finding are not being done by the auditor in accordance with accepted QA guidelines.

It is not required that the appraisal team approve the corrective action plans generated in response to field appraisals prior to the initiation of corrective action and close-out of the finding. This practice does not ensure that the corrective action plan accurately reflects the intent of the finding and that the proposed action is appropriate from a technical or compliance standpoint.

The causal factors that contributed to this finding are the lack of policy implementation in not establishing a BPA QA Program in response to DOE Order 5700.6B, and inadequate procedures and training based on standard audit practices that could provide guidance in the absence of a formal QA manual.

APPENDICES

APPENDIX A
BIOGRAPHICAL SKETCHES OF AUDIT TEAM PERSONNEL

NAME: Joseph O. Boda

AREA OF RESP: Audit Team Leader

ASSOCIATION: Office of Environmental Audit Headquarters
U.S. Department of Energy

EXPERIENCE: 21 Years

- **Environmental Engineer:** Principal responsibilities include leading multidisciplinary teams of professionals in performing Environmental Surveys, Assessments, and Audits. Acted as Assistant Team Leader for three Environmental Surveys (Mound Plant, Pantex Plant, and Los Alamos National Laboratory) and Team Leader for seven Environmental Surveys (Argonne National Laboratory, Idaho National Engineering Laboratory, Component Development and Integration Facility, Solar Energy Research Institute, Princeton Plasma Physics Laboratory, Ames Laboratory, and the National Institute for Petroleum and Energy Research). Also served as the Environmental Subteam Leader for the Pantex Plant and Brookhaven National Laboratory Tiger Team Assessments.
- Prior experience in the environmental field includes environmental research, development of environmental assessments and impact statements, and management of hazardous and toxic materials and waste under RCRA and TSCA. Also managed operations for a U.S. Air Force installation and major U.S. waterways and reservoirs for environmental issues including endangered species, cultural and natural resources preservation, and surface water and groundwater protection.

EDUCATION: M.S., Sanitary Engineering, Oregon State University
B.S., Soil and Water Science, University of California, Davis

NAME: Robert A. Crowley, P.E., P.L.S.

AREA OF RESP: Assistant Audit Team Leader

ASSOCIATION: U.S. Department of Energy

EXPERIENCE: 15 Years

- U.S. Department of Energy, Office of Environmental Audit. Environmental Protection Specialist under the direction of the Environmental Subteam Leader. Provides guidance, direction, and assistance to a multidisciplined group of professionals performing Environmental Surveys, Tiger Team Assessments, and Environmental Audits at DOE facilities. Assistant Team Leader for the Brookhaven Tiger Team Assessment and Special Assistant on the Paducah Tiger Team Assessment.
- Federal Energy Regulatory Commission, Office of Hydropower Licensing. Civil Engineer directing safety and design assessments of energy projects and ensuring operational and design compliance with NEPA requirements.
- Anne Arundel County Department of Public Works. Civil Engineer managing projects associated with water quality planning and surface and groundwater hydrology.
- State of Maryland, Soil Conservation Committee. Soil Conservation Engineer.

EDUCATION: Graduate Studies in Civil Engineering, University of Maryland
B.S., Agricultural Engineering, University of Maryland

NAME: Charlotte M. Barber

AREA OF RESP: CERCLA/SARA Title III

ASSOCIATION: NUS Corporation

EXPERIENCE: 5 Years

- CERCLA/SARA Title III specialist for the Sandia National Laboratories, Livermore, Tiger Team Assessment responsible for assessing compliance with SARA Title III and assisting in assessment of adherence to CERCLA, the National Contingency Plan, and DOE CERCLA Orders.
- Assistant task manager for the DOE Environmental Survey Prioritization effort responsible for ensuring that summary reports which contain pertinent information derived from the model output data are consistent in format as well as in content.
- Hazardous waste specialist responsible for collecting environmental setting and waste site specific data, developing the data into a form suitable for input to the environmental exposure assessment model, and writing summary reports which contain pertinent information derived from the output data for the DOE prioritization effort.
- Production coordinator responsible for the production of the FMPC Predecisional Draft Environment, Safety, and Health Assessment Report. Coordinated efforts with editorial staff, DOE Subteam Leaders, and DOE Team Leader. Interacted with site contractor and local temporary agency to provide adequate word processing support staff and equipment.
- Assistant environmental planner responsible for data collection efforts for a variety of projects including the U.S. EPA's comparison testing of various environmental ranking models and an aquatic biota technical report concerning measures employed to mitigate impingement, entrainment, and thermal impacts at various United States coastal power facilities. Also located and reviewed Federal and state statutes and regulations to identify environmental information requirements and the required review processes for various permit applications.

EDUCATION: B.A., Biology/Environmental Science, Western Maryland College

NAME: Teresa L. Brandt

AREA OF RESP: Project Administration

ASSOCIATION: NUS Corporation

EXPERIENCE: 10 Years

- Senior Project Administrator responsible for collecting, recording, organizing, and maintaining project labor hours and expenses on an automated/tracking Project Management System for a multitask project. Assists the Project Manager in preparing documentation for contract modifications. Initiates work orders, project authorizations, and Task Plans for new and/or modifications to existing project tasks.
- Author of "Protocols for Preparation and Production of Tiger Team Assessment Reports" (currently in draft).
- Additional responsibilities include coordinating logistics for the on-site Tiger Team Assessment efforts, ensuring that adequate secretarial support and equipment are available, as well as coordinating the production of the Environmental Assessment Reports. In addition, has provided administrative support for Tiger Teams composed of more than 40 professionals at the Feed Materials Production Center, Fernald, Ohio; the Mound Plant, Miamisburg, Ohio; and Sandia National Laboratories, Livermore, in Livermore, California.
- Project Coordinator responsibilities included coordinating and scheduling word processing, graphic art, editing, and reproduction efforts. Coordinated and scheduled the preparation of the DOE Environmental Survey reports and the Prioritization Draft Appendix reports. Tracked contract deliverables as well as other project-related materials.

EDUCATION: A.A. (in progress), Business Administration,
Frederick Community College

NAME: Joseph G. Crist

AREA OF RESP: Air Quality/Toxic and Chemical Substances (PCBs)

ASSOCIATION: NUS Corporation

EXPERIENCE: 30 Years

- Air Quality Specialist for Feed Materials Production Center, the Portsmouth Gaseous Diffusion Plant, Brookhaven National Laboratory, and Hanford Site Tiger Team Assessments. Air Quality Specialist for the DOE Environmental Survey Program at FMPC, PORTS, Brookhaven, Lawrence Livermore, Sandia Livermore, Fermilab, and Santa Susana laboratories as well as the Paducah and Oak Ridge Gaseous Diffusion Plants.
- Developed PCB portion of an Environmental Regulations Training course for a major chemical manufacturer. Conducted over 30 PCB compliance audits for a Fortune 500 corporation. Gave testimony as an expert witness on contamination of oil handling equipment by PCBs.
- Has over 30 years' experience in environmental affairs, including over 10 years' experience in conducting Environmental Surveys, Audits, Assessments and Evaluations. Conducted specific training for Air Quality Tiger Team Specialists. Established and managed environmental evaluation (i.e., Audit) program for a Fortune 500 corporation. Authored "Reporting, Recordkeeping, and Disclosure Requirements for the Environmental Audit," one volume of the series Environment Audit Handbook, Executive Enterprises, New York, 1989.

EDUCATION: Ph.D., Organic Chemistry, Pennsylvania State University
B.S., Chemistry, University of Notre Dame

NAME: C. Joseph English, Jr., P.E.

AREA OF RESP: Surface Water/Waste Management

ASSOCIATION: ICF Kaiser Engineers

EXPERIENCE: 11 Years

- Waste Management Specialist with U.S. Department of Energy (DOE) Environmental Survey at the Savannah River Site, Los Alamos National Laboratory, Oak Ridge National Laboratory, Lawrence Berkeley Laboratory, and Stanford Linear Accelerator Center. Waste Management Specialist for DOE Tiger Team Assessment of the Mound Plant and Sandia National Laboratories, Livermore.
- Manager of environmental compliance support activities for private clients and contractors at the DOE Hanford Site and Los Alamos National Laboratory. Managed preparation of RCRA Part B permit applications and closure plans. Conducted comprehensive environmental compliance audits associated with waste management, wastewater discharges, toxic substances, and air releases.
- Manager of inactive waste site characterization projects. Site manager for Remedial Investigation/Feasibility Study projects performed for EPA under ARCS and REM programs and for the U.S. Army Toxic and Hazardous Materials Agency under the Army Installation Restoration Program. Managed Preliminary Assessments and Site Inspections performed for the Bureau of Land Management in Region X.
- Research engineer responsible for performing laboratory studies related to wastewater treatment processes.

EDUCATION: M.S., Civil Engineering, Oregon State University
B.S., Civil Engineering, Oregon State University

NAME: Martin J. Letourneau

AREA OF RESP: CERCLA/Toxic and Chemical Materials

ASSOCIATION: ICF, Incorporated

EXPERIENCE: 4 Years

- Waste Management Specialist for the Sandia National Laboratories, Livermore, Tiger Team Assessment.
- Provided technical support to Los Alamos National Laboratory with regard to inactive waste sites, waste management, and air pollution controls.
- Investigated and analyzed numerous corporations' compliance with environmental regulations in the western United States, including SARA Title III, air pollution regulations, RCRA permitting and operation standards, and other state and local regulations. Operations assessed include aerospace, furniture manufacturing, auto manufacturing, computer circuit board printing, metal plating, oil refining, and pharmaceuticals.
- Provided policy analysis to the U.S. Environmental Protection Agency (EPA) with regard to RCRA corrective actions, CERCLA remedial actions, and RCRA permitting and operation standards for TSDs.
- Developed guidance and training for the EPA on compliance with applicable or relevant and appropriate standards (ARARs), the RCRA land disposal restrictions, and the RCRA location standards.
- Developed decision methodologies for selecting corrective and remedial actions at RCRA and CERCLA sites.

EDUCATION: Master of Public Policy, Harvard University,
Kennedy School of Government
B.A., Economics, Willamette University

NAME: Kurt D. Lyso

AREA OF RESP: Groundwater

ASSOCIATION: ICF Kaiser Engineers

EXPERIENCE: 8 Years

- Geologist with more than 8 years of experience in field studies ranging from paleomagnetism to geotechnical studies to RCRA Compliance/Hazardous Materials Monitoring.
- Hydrogeologist extensively involved in Environmental Audits, Preliminary Assessments (PAs), pre-Acquisition Audit/Investigations, Regulatory Analysis, and review of No-Migration Petitions. Primary technical contributor of evaluations of hydrogeologic characterizations of 90 United States counties for a nationwide survey of potential groundwater contamination. Provided technical guidance to geologists at a major Superfund site in California while performing primary duties of providing health and safety support. Areas of past experience (prior to joining ICF-KE) include subsurface exploration investigations regarding engineering and construction projects, oil and gas exploration projects, and paleomagnetism studies in graduate school.

EDUCATION: M.S., Geology Candidate, Western Washington University
B.S., Geology, Chemistry (Minor), Western Washington University

NAME: Mark D. Notich

AREA OF RESP: Quality Assurance and FIFRA

ASSOCIATION: NUS Corporation

EXPERIENCE: 12 Years

- Contractor Coordinator for Tiger Team Environmental Assessment for the Y-12 Plant, Pinellas Plant, and Hanford Site. Toxic and Chemical Materials and Quality Assurance Technical Specialist for the Tiger Team Environmental Assessment at the Rocky Flats Plant and Environmental Surveys at Argonne National Laboratory, Oak Ridge National Laboratory, Pittsburgh Energy Technology Center, Morgantown Energy Technology Center, and the Naval Petroleum Reserves in California.
- Certified auditor in accordance with NQA-1 requirements.
- Served as Quality Assurance Officer for the Alternate Remedial Contracting Services (ARCS) efforts for EPA Regions I and III. Environmental chemist experienced in environmental sample analysis by gas chromatography, atomic absorption, and wet chemical methods.

EDUCATION: B.S., Chemistry, University of Maryland

NAME: David M. Wunsch

AREA OF RESP: Team Coordinator, Management

ASSOCIATION: NUS Corporation

EXPERIENCE: 12 Years

- Toxic and Chemical Materials and Quality Assurance Specialist for the Tiger Team Assessments at Feed Materials Production Center, Fernald, Ohio - July 1989; Portsmouth Uranium Enrichment Complex, Piketon, Ohio - October 1989; Brookhaven National Laboratory, Upton, New York - March 1990; and Paducah Gaseous Diffusion Plant, Paducah, Kentucky - June 1990.
- Environmental scientist with broad experience including laboratory management in medical research and environmental analytical chemistry, toxic and hazardous materials management, writing of QA manuals, and writing of environmental chemistry sections of QA project plans and program plans. Member of the American Society of Quality Assurance and certified QA auditor for NUS Corporation.
- Management positions held in both line and staff organizations with experience in operations, administration, and staff reorganization.

EDUCATION: M.B.A., Management Studies, Loyola College
M.S., Pharmacology, New York Medical College
M.Sc., Applied Physiology, University of Guelph
B.S., Animal Science, Rutgers University

APPENDIX B
AUDIT TEAM SCHEDULE OF ON-SITE ACTIVITIES

**BONNEVILLE POWER ADMINISTRATION LOWER COLUMBIA AREA
AUDIT TEAM
SCHEDULE OF ON-SITE ACTIVITIES**

Page 1 of 2

Week 1	Air/TSCA J. Crist	CERCLA/TSCA N. Letourneau	Groundwater K. Lyso	RCRA/Surface Water J. English	SARA Title III C. Barber	QA/FIFRA M. Notich	QA/TSCA/Mgmt D. Munsch
Thursday 9/20	Plant Services and Annex Air Sources Bldgs. 671 and 765	With Groundwater specialist	PA/SI & RI/FS Groundwater Data Review	Inspect Bldgs. 671, 765, and 640	Review Chemical Inventory	--	Document Review of QA
PM	PCB Record Review	Ross Interviews: review plans & milestones for RI/FS	Inspect Ross outside storage areas and grounds	With Groundwater specialist	Review hazardous material controls & tracking procedures	--	BPA Env. Management Interviews
Friday 9/21	Ampere Bldgs. Air Sources Bldgs. 989, 990, and 991	SARA Title III meeting w/Ross personnel	Complete outside inspection	With Air specialist	With CERCLA specialist	--	Ross Env. Management Interviews
PM	PCB Record Review	Inspect Bldg. 814 & follow up on RI/FS milestones & plans	Data review and interviews: RI/FS	Inspect hazardous waste & chemical storage areas Bldgs. 482 and 814	Review SARA Title III Records & Procedures	--	With RCRA/Surface Water specialist
Monday 9/24	PCB Inspection: Bldgs. 772, 768, and 996 Ross Substation, Capacitor Yard Fog Test Area	UST-Record review	Follow up on groundwater Issues Meeting - dry wells monitoring program	Review/Interviews: Sampling & Analyses Data, SP/C and Hazardous Waste Contingency Plans & Engineering Plans	Review self- appraisal reports	Arrival on- site	Interview at BPA With Air specialist
PM	PCB Inspection con't: Ampere Bldg. Capacitor Test Lab	UST review/ interviews	Findings development	Follow up interviews	Review self- appraisal reports	Inspection of the laboratory in Bldg. 989	With QA specialist Interview at Ross
Tuesday 9/25	Off-site substation tour: Troutdale	Off-site tour of Troutdale Substation	With Air specialist	With Air specialist	Findings development	Review Lab Subcontracts and Internal Lab Audits	Findings development and follow up
PM	Bonneville and two small substations	Ross Interviews: CERCLA spill reporting, site I.D. and procedures	With Air specialist	With Air specialist	With CERCLA specialist	FIFRA: Tour of Bldg. 814	Findings development and follow up

BONNEVILLE POWER ADMINISTRATION LOWER COLUMBIA AREA
AUDIT TEAM
SCHEDULE OF ON-SITE ACTIVITIES*

Page 2 of 2

Week 1	Air/TSCA J. Crist	CERCLA/TSCA M. Letourneau	Groundwater K. Lyso	RCRA/Surface Water J. English	SARA Title III C. Barber	QA/FIFRA M. Notich	QA/TSCA/Mgmt D. Wursch
Wednesday AM 9/26	Off-site tour of Longview Substation	Off-site tour of Longview Substation	Follow up	Follow up document and procedures review	Findings development and follow up	Document review	Findings development
PM	Follow up on Ross Substation	Follow up on dry wells, spills	Follow up regarding dry wells	Follow up document and procedures review	Findings development and follow up	Revisits/ rechecks	Findings development

* Findings development 9/26 - 10/4 with closeout on 10/5/90.

APPENDIX C
LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
A-1	Letter - Valdez Principles	J.J. Jura, Bonneville Power Administration to all employees	April 10, 1990
A-2	Environmental Appraisal Report Ross Complex Clean Air Act	U.S. Department of Energy/Bonneville Power Administration	August 1989
A-3	Order of Authorization to Operate 1988	J. Sherby, Southwest Air Pollution Control Authority, to J. Straub	August 25, 1988
A-4	Order of Authorization to Operate 1989	G. Strawn, Southwest Air Pollution Control Authority, to J. Straub	September 13, 1989
A-5	Order of Authorization to Operate 1990	G. Strawn, Southwest Air Pollution Control Authority, to J. Straub	August 31, 1990

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
SW-1	Bonneville Power Administration; Operations, Maintenance, and Replacement 10-Year Plan, 1990-1999, Environmental Strategy, DRAFT	Bonneville Power Administration, Portland, OR	June 6, 1990
SW-2	Site Inspection Report on the Bonneville Power Administration's Ross Complex, Vancouver, Washington, Volume III	G. V. Last, K. B. Olsen, W. H. Walters - Pacific Northwest Laboratory, Richland, WA	July 1988
SW-3	Bonneville Power Administration, 1987 Annual Environmental Report, BPA-AER-1987	Bonneville Power Administration, Portland, OR	No date
SW-4	Bonneville Power Administration, 1988 Annual Environmental Report, BPA-AER-1988	Bonneville Power Administration, Portland, OR	No date
SW-5	Bonneville Power Administration, 1989 Annual Environmental Report, BPA-AER-1989	Bonneville Power Administration, Portland, OR	No date
SW-6	Report of Results for Contract No. DE-AC79-87BP33652, Substation Drinking Water Analysis for Bonneville Power Water Analysis, United States Department of Energy	CH2M HILL Northwest, Inc., Corvallis, OR	February 1988
SW-7	Environmental Appraisal Report, Ross Complex, Clean Water Act, Safe Drinking Water Act, Noise Control Act	Bonneville Power Administration, Portland, OR	November 1987
SW-8	Bonneville Power Administration, Monthly Environmental Compliance Report - July thru August 1989	Bonneville Power Administration, Portland, OR	No date
SW-9	Bonneville Power Administration, Monthly Environmental Compliance Report - September 1989	Bonneville Power Administration, Portland, OR	No date
SW-10	Bonneville Power Administration, Monthly Environmental Compliance Report - October 1989	Bonneville Power Administration, Portland, OR	No date
SW-11	Bonneville Power Administration, Monthly Environmental Compliance Report - November 1989	Bonneville Power Administration, Portland, OR	No date
SW-12	Bonneville Power Administration, Monthly Environmental Compliance Report - December 1989	Bonneville Power Administration, Portland, OR	No date
SW-13	Bonneville Power Administration, Monthly Environmental Compliance Report - January 1990	Bonneville Power Administration, Portland, OR	No date
SW-14	Bonneville Power Administration, Monthly Environmental Compliance Report - February 1990	Bonneville Power Administration, Portland, OR	No date

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
SW-15	Bonneville Power Administration, Monthly Environmental Compliance Report - March 1990	Bonneville Power Administration, Portland, OR	No date
SW-16	Bonneville Power Administration, Monthly Environmental Compliance Report - April 1990	Bonneville Power Administration, Portland, OR	No date
SW-17	Bonneville Power Administration, Monthly Environmental Compliance Report - May 1990	Bonneville Power Administration, Portland, OR	No date
SW-18	Bonneville Power Administration, Monthly Environmental Compliance Report - June 1990	Bonneville Power Administration, Portland, OR	No date
SW-19	Bonneville Power Administration, Monthly Environmental Compliance Report - July 1990	Bonneville Power Administration, Portland, OR	No date
SW-20	Analysis of Materials Sampled from the Ross Complex Oil Separator Tanks, ERGA-83-42	David C. Plath, Bonneville Power Administration, Division of Laboratories	November 18, 1983
SW-21	PCB Analysis on Oil/Water Separator from Ross Complex Garage, ERGA 85-48	Andreas Mueller, Bonneville Power Administration, Division of Laboratories	September 23, 1985
SW-22	Analysis of Ross Complex Oil Separator Tanks for Polychlorinated Biphenyls and Pentachlorophenol, ERGA 85-53	D. W. Baker, Bonneville Power Administration, Division of Laboratories	November 1, 1985
SW-23	PCB and EP Toxicity Analysis of Samples from Ross Oil Separator Sumps, ERGA 86-72	Wayne Jordan, Bonneville Power Administration, Division of Laboratories	July 29, 1986
SW-24	Metal Analysis of Water Samples from Oil Separator Tank near Soils Laboratory, ERGA 86-91	Wayne Jordan, Bonneville Power Administration, Division of Laboratories	September 15, 1986
SW-25	Analysis of Oil Separator Tank at Ross Complex for Total Halogens and Flash Point, ERGA 86-97	Wayne Jordan, Bonneville Power Administration, Division of Laboratories	September 22, 1986
SW-26	Analysis of Sediment Samples from Van's Way and the Heat Line Oil/Water Separator Tanks, ERGA 86-117	Wayne Jordan, Bonneville Power Administration, Division of Laboratories	October 22, 1986
SW-27	EP Toxic Metal Analysis of Water Sample from Oil Separator Tank No. 6 at Ross Complex, ERGA 86-105	Wayne Jordan, Bonneville Power Administration, Division of Laboratories	October 10, 1986
SW-28	Ross Complex Oil/Water Separator Clean-up Project: Grease and Oil in Water, ERGA 86-125	David W. Baker, Bonneville Power Administration, Division of Laboratories	October 31, 1986

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
SW-29	Analysis of Sediment Samples from the Dittmer Oil/Water Separator Tank, ERGA 86-128	Wayne Jordan, Bonneville Power Administration, Division of Laboratories	October 31, 1986
SW-30	Analysis of Water Samples from the Dittmer Oil/Water Separator Tank for PCB and Grease and Oil, ERGA 86-129	Wayne Jordan, Bonneville Power Administration, Division of Laboratories	November 3, 1986
SW-31	PCB and Grease and Oil Analysis of Water Samples from the Dittmer "Baker" Tank, ERGA 86-130	Wayne Jordan, Bonneville Power Administration, Division of Laboratories	November 4, 1986
SW-32	Analysis of Water Sample from the Dittmer Oil/Water Separator Tank, ERGA 86-134	Wayne Jordan, Bonneville Power Administration, Division of Laboratories	November 17, 1986
SW-33	Analysis of Water Samples from the Dittmer Oil/Water Separator Tank, ERGA 86-149	Wayne Jordan, Bonneville Power Administration, Division of Laboratories	December 10, 1986
SW-34	Results of Analysis of Sediment Samples from Underground Oil/Water Separator Tank, ERGA 87-23	D. W. Jordan, Bonneville Power Administration, Division of Laboratories	March 3, 1987
SW-35	PCB Analysis of Sludge Samples from Ross Fog Test Chamber, ELMC 89-71	Mary Ann Fitzgibbon, Bonneville Power Administration, Division of Laboratories	July 31, 1989
SW-36	Sampling and Cleaning Oil/Water Separators, P64076-SPCC-04	G. M. Ihle, Bonneville Power Administration	September 25, 1986
SW-37	Oil Spill Containment Systems Maintenance/Inspection Schedule, S-E-90-01	Susan Brookfield, Bonneville Power Administration	March 1, 1990
SW-38	Spill Reporting Procedure, P64076-SPCC-01	G. M. Ihle, Bonneville Power Administration	August 13, 1986
SW-39	Oil Leak Notification, memorandum	R. Rowe, Bonneville Power Administration	July 25, 1986

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
GW-1	RI/FS Work Plan - BPA Ross Complex, Vancouver, WA	Danes & Moore/Eng & Consulting Firm/Bonneville Power Administration	September 11, 1990
GW-2	General Environmental Protection Program (DOE Order 5400.1)	U.S. Department of Energy	November 9, 1988
GW-3	Environmental Strategy OM&R 10-Year Plan	Bonneville Power Administration	June 6, 1990
GW-4	Site Inspection Report to BPA Ross Complex, Vancouver, WA Volumes I, II, and III	Pacific Northwest Laboratory/Bonneville Power Administration	July 1988
GW-5	Environmental Appraisal Report, Ross Complex	Bonneville Power Administration, U.S. Department of Energy	November 1987
GW-6	BPA Fact No. 1-4, April - July 1990	Bonneville Power Administration	April - July 1990
GW-7	1987 Annual Environmental Report	Bonneville Power Administration	1987
GW-8	1988 Annual Environmental Report	Bonneville Power Administration	1988
GW-9	1989 Annual Environmental Report	Bonneville Power Administration	1989

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
WM-1	Bonneville Power Administration; Operations, Maintenance, and Replacement 10-Year Plan, 1990-1999, Environmental Strategy, DRAFT	Bonneville Power Administration, Portland, OR	June 6, 1990
WM-2	Site Inspection Report on the Bonneville Power Administration's Ross Complex, Vancouver, Washington, Volume I	G. V. Last, K. B. Olsen, W. H. Walters - Pacific Northwest Laboratory, Richland, WA	July 1988
WM-3	Resource Conservation and Recovery Act Part B - Operating Permit Application	Roy F. Weston, Inc., Seattle, WA	November 8, 1988
WM-4	Bonneville Power Administration, 1987 Annual Environmental Report, BPA-AER-1987	Bonneville Power Administration, Portland, OR	No date
WM-5	Bonneville Power Administration, 1988 Annual Environmental Report, BPA-AER-1988	Bonneville Power Administration, Portland, OR	No date
WM-6	Bonneville Power Administration 1989 Annual Environmental Report, BPA-AER-1989	Bonneville Power Administration, Portland, OR	No date
WM-7	Bonneville Power Administration, Monthly Environmental Compliance Report - July thru August 1989	Bonneville Power Administration, Portland, OR	No date
WM-8	Bonneville Power Administration, Monthly Environmental Compliance Report - September 1989	Bonneville Power Administration, Portland, OR	No date
WM-9	Bonneville Power Administration, Monthly Environmental Compliance Report - October 1989	Bonneville Power Administration, Portland, OR	No date
WM-10	Bonneville Power Administration, Monthly Environmental Compliance Report - November 1989	Bonneville Power Administration, Portland, OR	No date
WM-11	Bonneville Power Administration, Monthly Environmental Compliance Report - December 1989	Bonneville Power Administration, Portland, OR	No date
WM-12	Bonneville Power Administration, Monthly Environmental Compliance Report - January 1990	Bonneville Power Administration, Portland, OR	No date
WM-13	Bonneville Power Administration, Monthly Environmental Compliance Report - February 1990	Bonneville Power Administration, Portland, OR	No date
WM-14	Bonneville Power Administration, Monthly Environmental Compliance Report - March 1990	Bonneville Power Administration, Portland, OR	No date

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
WM-15	Bonneville Power Administration, Monthly Environmental Compliance Report - April 1990	Bonneville Power Administration, Portland, OR	No date
WM-16	Bonneville Power Administration, Monthly Environmental Compliance Report - May 1990	Bonneville Power Administration, Portland, OR	No date
WM-17	Bonneville Power Administration, Monthly Environmental Compliance Report - June 1990	Bonneville Power Administration, Portland, OR	No date
WM-18	Bonneville Power Administration, Monthly Environmental Compliance Report - July 1990	Bonneville Power Administration, Portland, OR	No date
WM-19	Identified Waste Stream Handbook	Bonneville Power Administration, Portland, OR	No date
WM-20	Final Environmental Appraisal Report for BPA Ross Complex, Vancouver, Washington, Conducted May 1986, EC/RD-LC-01	Bonneville Power Administration, Portland, OR	No date
WM-21	Bonneville Power Administration Ross Complex Federal Facility Agreement, Administrative Docket Number 1089-07-17-120	United States Environmental Protection Agency, Region X; Washington State Department of Ecology; Bonneville Power Administration	March 1, 1990
WM-22	Contingency Plan Ross Complex (Final Draft)	Bonneville Power Administration, Ross Complex, Vancouver, WA	No date
WM-23	Bonneville Power Administration Interim Waste Minimization Plan	Bonneville Power Administration, Portland, OR	May 1990
WM-24	Procedures for Handling Hazardous and PCB Waste, P64049-HW-01	C. E. O'Connor and M. I. Freund, Bonneville Power Administration	March 10, 1987
WM-25	Underground Storage Tank Log	Bonneville Power Administration, Environment (SJ)	March 7, 1986
WM-26	Lower Columbia Area Underground Storage Tank Destruction Certificate	L. Purchase, Environmental Coordinator, Bonneville Power Administration	1987
WM-27	Washington State Underground Storage Tank Notification Form	Washington Department of Ecology	1985
WM-28	Underground Fuel Tanks Leak Testing, Abandonment, Replacement, and Installation	G. M. Ihle, Bonneville Power Administration	December 31, 1985
WM-29	Underground Storage Tank Program Recordkeeping and Reporting (Draft)	L. Purchase, Bonneville Power Administration	January 8, 1990

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
WM-30	Spill Reporting Procedure, P64076-SPCC-01	G. M. Ihle, Bonneville Power Administration	August 13, 1986

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
TSCA-1	Environmental Appraisal Report, Toxic Substances Control Act	U.S. Department of Energy/Bonneville Power Administration	August 1989
TSCA-2	Annual PCB Report - Division of Maintenance, 1984	M. Freund/Substation Maintenance Branch - OHS	June 24, 1985
TSCA-3	Annual PCB Report - Utilization and Disposal, 1984	To T. Kafara, G. Davis/Utilization and Disposal Section/T. Kafara	February 16, 1985
TSCA-4	Annual PCB Report - Utilization and Disposal, 1985	G. Davis/Utilization and Disposal Section/T. Kafara	February 1, 1986
TSCA-5	Annual PCB Report - Division of Maintenance, 1985	M. Freund/Substation Maintenance Branch/G. Baesler	June 23, 1986
TSCA-6	Annual PCB Report - Utilization and Disposal, 1986	G. Davis/Utilization and Disposal/G. Baesler	February 9, 1987
TSCA-7	Annual PCB Report - Division of Maintenance, 1986	M. Freund/Substation Maintenance Branch/G. Baesler	June 24, 1987
TSCA-8	Annual PCB Report - Utilization and Disposal, 1987	D.D. Adams/Utilization and Disposal/G. Baesler	July 1, 1988
TSCA-9	Annual PCB Report - Division of Maintenance, 1987	G. Gillard/Environmental Protection Section/G. Baesler	June 24, 1988
TSCA-10	Annual PCB Report - Utilization and Disposal, 1988	V. Shiye/Utilization and Disposal/G. Baesler	March 4, 1989
TSCA-11	Annual PCB Report - Division of System Maintenance, 1988	E. Gillard/Environmental Protection Section/G. Baesler	July 25, 1989
TSCA-12	Annual PCB Report - Utilization and Disposal, 1989 Covering January 31, 1989 to December 31, 1989	V. Shiye/Utilization and Disposal/G. Baesler	May 8, 1990
TSCA-13	Annual PCB Report - Division of System Maintenance, 1989 Covering January 31, 1989 to February 4, 1990	E. Gillard/MMNC/G. Baesler	June 27, 1990
TSCA-14	Federal Facility - Notice of Significant Noncompliance	G. Haselberger/U.S. Environmental Protection Agency/A. Morrell	July 6, 1990
TSCA-15	Oil Sampling Program for PCB Content	D. L. Johnson/Substation Maintenance Branch/Area Substation Maintenance Superintendents	January 13, 1982
TSCA-16	Bonneville Power Administration PCB Policy/Guidelines	Bonneville Power Administration Environmental Manual Chapter 986 (Revised) (Draft)	1990(?)
TSCA-17	Annual PCB Report	F. M. Johnson/Division of System Maintenance/Addressees	March 14, 1990

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
TSCA-18	Notification of PCB Activity	B. Ostron/U.S. Environmental Protection Agency/R. Bennett	March 12, 1990

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
QA-1	Order for Supplies and Services Columbia Analytical Laboratories	Bonneville Power Administration/Contracting Purchasing	Unknown
QA-2	Order for Supplies and Services Pacific Wood Treating, Inc.	Bonneville Power Administration/Contracting Purchasing	Unknown
QA-3	Site Cleanup of Hazardous and/or Toxic Waste of Substations in Bonneville's Service Area Rfp No. DE- RP79-89BP98418	Bonneville Power Administration/Construction Contracting	June 12, 1989
QA-4	Materials Branch Technical Procedure BPA PCB Program	Bonneville Power Administration/Materials Branch	July 24, 1985
QA-5	PCB Assessment and Remediation for BPA Longview Substation, Longview, WA Contract # DE-AC79-89BP98418	Bonneville Power Administration/Construction Contracting	May 1990
QA-6	Quality Assurance Program Manual QAP-1.1	Bonneville Power Administration/QA Branch	June 1, 1990
QA-7	Quality Assurance Program Manual QAP-3.4	Bonneville Power Administration/QA Branch	January 10, 1989
QA-8	Bonneville Power Administration Specification - Quality Program Requirements EMQ-1.3	Bonneville Power Administration/QA Branch	1985
QA-9	QA/QC Data Review Preliminary Sampling Round Volatile Data BPA 6737-004-005	Melody Allen, QA/QC Chemist/Dames and Moore/Mark Schultheis, Project Manager	December 2, 1989

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
IWS-1	Annual Report to Congress, FY 1989	U.S. Department of Energy	January 1990
IWS-2	QA/QC data review: preliminary sampling round inorganic data	M. Allen, Dames and Moore	December 2, 1989
IWS-3	QA/QC data review: preliminary sampling round volatile data	M. Allen, Dames and Moore	December 2, 1989
IWS-4	QA Project Plan for Ross Complex CERCLA Site Investigation	Pacific Northwest Laboratory	September 16, 1987
IWS-5	BPA Ross Complex RI/FS Quarterly Progress Report	Bonneville Power Administration, G. Lenz	June 1990
IWS-6	RI/FS Weekly Report File	Bonneville Power Administration, G. Lenz	September 1989 - August 1990
IWS-7	Ross Complex RI QA Project Plan	Dames and Moore	1989
IWS-8	Ross Complex Superfund Site Community Relations Plan	Bonneville Power Administration	May 1990
IWS-9	Ross Complex Superfund Site Fact Sheet No. 1	Bonneville Power Administration	April 1990
IWS-10	Ross Complex Superfund Site Fact Sheet No. 2	Bonneville Power Administration	May 1990
IWS-11	Ross Complex Superfund Site Fact Sheet No. 3	Bonneville Power Administration	May 1990
IWS-12	Ross Complex Superfund Site Fact Sheet No. 4	Bonneville Power Administration	July 1990
IWS-13	BPA/EPA Federal Facility Agreement	U.S. Environmental Protection Agency/Bonneville Power Administration/Ecology	March 1, 1990
IWS-14	Preliminary Draft RI/FS Work Plan	Dames and Moore	September 11, 1990
IWS-15	BPA Operations, Maintenance, and Replacement 10-Year Plan	Bonneville Power Administration	June 6, 1990
IWS-16	Standards, Procedures, Instructions, and Information Index	Division of System Maintenance, Bonneville Power Administration	No Date
IWS-17	Monthly Environmental Compliance Reports	Bonneville Power Administration	July 1989 - July 1990
IWS-18	1987 Annual Environmental Report	Bonneville Power Administration	1987
IWS-19	1988 Annual Environmental Report	Bonneville Power Administration	1988

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
IWS-20	1989 Annual Environmental Report	Bonneville Power Administration	1989
IWS-21	Site Investigation Report on BPA Ross Complex	Pacific Northwest Laboratory	July 1988
IWS-22	Final Environmental Appraisal Report for BPA Ross Complex	Bonneville Power Administration	May 1986
IWS-23	UGD Spill Log	V. Shipe, Bonneville Power Administration	1990
IWS-24	Ross Complex Spill Log	G. Lenz, Bonneville Power Administration	1990
IWS-25	Offsite Spill Reporting Procedure	Division of Maintenance, Bonneville Power Administration	July 21, 1986
IWS-26	On-Site PCB Spill Report form	G. Lenz, Hazardous Waste Manager	No Date
IWS-27	Memorandum RE: Onsite Oil Spill, July 26, 1989	G. Lenz, Hazardous Waste Manager	August 2, 1989
IWS-28	CERCLA Preliminary Assessment: BPA's Ross Complex	U.S. Department of Energy, Bonneville Power Administration	April 1986
IWS-29	CERCLA Preliminary Assessment: BPA's Troutdale Substation	U.S. Department of Energy, Bonneville Power Administration	January 25, 1990
IWS-30	Draft Policies 101 and 102; Release Reporting and Independent Cleanup Actions	Washington Department of Ecology	May 25, 1990
IWS-31	Underground Storage Tank Program Recordkeeping and Reporting (Draft)	L. Purchase, Bonneville Power Administration	January 8, 1990
IWS-32	Migration of Oil in Soil and Groundwater	G. M. Ihle	March 31, 1986
IWS-33	Memorandum RE: Delegation of Authority and Responsibilities for Implementing Environmental Programs (DOE Order 5400.1) in the Lower Columbia Area	G. Gwinnett, Lower Columbia Manager, to R. Nichols Assistant Area Manager for Operations and Maintenance	July 5, 1990
IWS-34	Memorandum of Agreement between BPA and EPA, RE: PCB Cleanups	Bonneville Power Administration Substation	February 1985

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
SARA-1	SARA Title III - Not Applicable to Ross based on small quantities of materials	From: BPA - Ross Complex To: Ross DOE Audit Team	September 1990
SARA-2	BPA Memo - Superfund Amendments and Reauthorization Act (SARA) Title III - Emergency Planning and Community Right To Know Act of 1986	From: G. Baesler, Hazardous Waste Program Manager, SJ To: N. Stas, Environment Office, SJ	July 15, 1987
SARA-3	BPA Memo - EPA's Community Right-To-Know	From: J. Bomar, Assistant Safety Manager, SJ To: N. Stas, Environmental Scientist, SJ	July 28, 1987
SARA-4	Computer Printout - Bonneville Power Administration Inventory Control System for Material Classes 27, 33, 82, 85, and 89	BPA, Supply Operations Branch	September 20, 1990

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
MGT-1	Fact Sheets Numbers 1-3	Bonneville Power Administration	April - May 1990
MGT-2	Site Inspection Report on the Bonneville Power Administration's Ross Complex, Vancouver, Washington	Pacific Northwest Laboratory	July 1988
MGT-3	Staffing charts by organization	Bonneville Power Administration/U.S. Department of Energy	March 31, 1990
MGT-4	CERCLA Preliminary Assessment Bonneville Power Administration's Ross Complex	Bonneville Power Administration/U.S. Department of Energy	April 1986
MGT-5	1987 Annual Environmental Report	Bonneville Power Administration/U.S. Department of Energy	No Date
MGT-6	1988 Annual Environmental Report	Bonneville Power Administration/U.S. Department of Energy	No Date
MGT-7	1989 Annual Environmental Report	Bonneville Power Administration/U.S. Department of Energy	No Date
MGT-8	Federal Facility Agreement Under CERCLA Section 120	Bonneville Power Administration/State of Washington/U.S. Environmental Protection Agency	March 1, 1990
MGT-9	Monthly Environmental Compliance Report	Bonneville Power Administration	July 1989 - August 1989
MGT-10	Monthly Environmental Compliance Report	Bonneville Power Administration	September 1989
MGT-11	Monthly Environmental Compliance Report	Bonneville Power Administration	October 1989
MGT-12	Monthly Environmental Compliance Report	Bonneville Power Administration	November 1989
MGT-13	Monthly Environmental Compliance Report	Bonneville Power Administration	December 1989
MGT-14	Monthly Environmental Compliance Report	Bonneville Power Administration	January 1990
MGT-15	Monthly Environmental Compliance Report	Bonneville Power Administration	February 1990
MGT-16	Monthly Environmental Compliance Report	Bonneville Power Administration	March 1990
MGT-17	Monthly Environmental Compliance Report	Bonneville Power Administration	April 1990
MGT-18	Monthly Environmental Compliance Report	Bonneville Power Administration	May 1990
MGT-19	Monthly Environmental Compliance Report	Bonneville Power Administration	June 1990

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
MGT-20	Monthly Environmental Compliance Report	Bonneville Power Administration	July 1990
MGT-21	Final Environmental Appraisal Report for BPA Ross Complex (conducted May 1986)	M. Berg/J. Hooson/N. Stas	No Date
MGT-22	Operations, Maintenance and Replacement 10-Year Plan 1990-1999, Environmental Strategy (Draft Report)	Bonneville Power Administration	June 6, 1990
MGT-23	Memo: Delegation of Authority and Responsibilities for Implementing Environmental Protection Programs (DOE Order 5400.1)	J. Jura to Distribution	April 23, 1990
MGT-24	Further Redefinition of PSO Responsibilities for Implementing Environmental Protection Programs (DOE Order 5400.1)	S. Hickok to A. Morrell	June 11, 1990
MGT-25	Delegation of Authority and Responsibilities for Implementing Environmental Protection Programs in the Lower Columbia Area	G. Gwinnett to R. Nichols	July 5, 1990
MGT-26	Audit and Internal Review Tracking and Follow-up System Quarterly Management Report	Bonneville Power Administration, Office of Internal Audit	July 1990
MGT-27	Environmental Appraisal/Audit Guidelines - BPA	Bonneville Power Administration, Environmental Manager's Office	August 1986
MGT-28	Delegation of Authority and Responsibilities for Implementing Environmental Protection Programs (DOE Order 5400.1) for Office of OM&C	J. Jones to S. Hickok	September 11, 1990
MGT-29	Delegation of Authority and Responsibilities for Implementing Environmental Protection Programs (DOE Order 5400.1)	S. Hickok to Distribution	April 23, 1990
MGT-30	Letter: ES&H Information Network - Comments	S. Hickok/BPA to R. Berube/DOE-EH20	June 21, 1990
MGT-31	Environmental Roles and Responsibilities	J. Jones, G. Gwinnett and A. Morrell to S. Hickok	January 19, 1990
MGT-32	Position Description Package	Bonneville Power Administration	Not Applicable

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
SA-1	BPA, Draft Operations, Maintenance, and Replacement 10-Year Plan 1990-1999, Environmental Strategy	Bonneville Power Administration, OM&R	June 6, 1990
SA-2	BPA, Audit and Internal Review Tracking and Follow-up System, Quarterly Management Report	Bonneville Power Administration, Internal Audit (AK)	July 1990
SA-3	Environmental Appraisal/Audit Guidelines	Bonneville Power Administration, Environmental Manager's Office	August 1986
SA-4	Final Environmental Appraisal Report for BPA Ross Complex, Vancouver, Washington	M. Berg, Regional Operations Coordinator for Environment	May 1986
SA-5	Environmental Appraisal Report, Ross Complex: Clean Air Act; Federal Insecticide, Fungicide, and Rodenticide Act; and Toxic Substances Control Act	J. Hoosen, E&C Environmental Appraisal Program Coordinator	August 1989
SA-6	Environmental Appraisal Report, Ross Complex: CWA, SDWA, and NCA	N. Stas, Assistant Environmental Manager	November 1987
SA-7	Bonneville Power Administration - 1987 Annual Environmental Report	Bonneville Power Administration	1987
SA-8	BPA Manual Chapter 902 - Environmental Appraisal Program	Bonneville Power Administration	May 1984
SA-9	1984 Functional Environmental Appraisal	Bonneville Power Administration	1984
SA-10	1985 Functional Environmental Appraisal	Bonneville Power Administration	1985
SA-11	1987 Functional Environmental Appraisal	Bonneville Power Administration	1987
SA-12	1986 Functional Environmental Appraisal	Bonneville Power Administration	1986
SA-13	BPA, Monthly Compliance Reports (SEN-7 reports)	Bonneville Power Administration	July 1989 - July 1990
SA-14	DOE Memorandum: Environmental Appraisal Schedule for Fiscal Year (FY) 1991	From: A. Morrell, BPA-AJ To: M. Kilpatrick, EH-24	September 19, 1990

LIST OF SITE DOCUMENTS REVIEWED BY THE AUDIT TEAM

DOCUMENT NUMBER	TITLE/DESCRIPTION	AUTHOR/ORGANIZATION/RECIPIENT	DOCUMENT DATE
SA-15	BPA Memorandum: Electrical Equipment in Force Account Storage Yard with checklist attached	From: G. Lenz, LDN To: K. Rivers, Substation Construction Superintendent	July 17, 1990
SA-16	Hazardous Waste Inspection completed checklist	From: G. Lenz, LDN To: D. Benjamin, LDTR	May 31, 1990
SA-17	Hazardous Waste Inspection, Line Maintenance Area completed checklist	From: G. Lenz, LDN To: K. Rivers, MKSF	May 31, 1990
SA-18	1988 Annual Environmental Report	Bonneville Power Administration	1988
SA-19	1989 Annual Environmental Report	Bonneville Power Administration	1989

APPENDIX D
LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-A-1	9/20/90	J. Crist	Ross - LDN	B&G Manager - LCA	Air Controls
I-A-2	9/20/90	J. Crist	7S9 - AJ	Environmental Specialist	Air Controls
I-A-3	9/20/90	J. Crist	Ross - MKSG		Air Controls
I-A-4	9/20/90	J. Crist	Southwest Air Pollution Control Authority	Inspector	Air Sources
I-A-5	9/21/90	J. Crist	Ross	Facility Manager	Air Sources
I-A-6	9/21/90	J. Crist	AJ		Air Sources
I-A-7	9/21/90	J. Crist	Ross - LDSR		Air Sources
I-A-8	9/21/90	J. Crist	Ross - LDSQ Ross - LDSQ		Air Sources Air Sources
I-A-9	9/21/90	J. Crist	Ross - ELII		Air Sources
I-A-10	9/21/90	J. Crist	ELMC	Chief, Chemical Laboratory Section	Air Sources
I-A-11	9/21/90	J. Crist	MMNE		Air Sources

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-SW-1	9/20/90	J. English	LDN	Facility Manager	Storage areas, drainage system
I-SW-2	9/20/90	J. English	SRMC	Warehouse Manager	Storage areas
I-SW-3	9/21/90	J. English	MMNE	Foreman	Ross garage
I-SW-4	9/24/90	J. English	LDOR	Chief Operator	Ross substation
I-SW-5	9/24/90	J. English	LDN	Facility Manager	Drainage system, water sampling
I-SW-6	9/24/90	J. English	MMNC	Environmental Specialist	Surface water drainage
I-SW-7	9/24/90	J. English	MMNC	Environmental Specialist	Surface water drainage
I-SW-8	9/25/90	J. English	LD	Environmental Specialist	Troutdale, Acton, North Bonneville, and Camas substations
I-SW-9	9/25/90	J. English	Operator	Troutdale substation	
I-SW-10	9/25/90	J. English	LDOR	Operator	North Bonneville substation
I-SW-11	9/28/90	J. English	Vancouver Public Works	Supervisor	Permit requirements
I-SW-12	9/28/90	J. English	Vancouver Public Works	Engineer	Permit requirements
I-SW-13	9/28/90	J. English	AJ	Environmental Specialist	NPDES Permit

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-GW-1	9/20/90	K. Lyso	Bonneville Power Administration	Hazardous Waste Manager	RI/FS
I-GW-2	9/20/90	K. Lyso	Bonneville Power Administration	Environmental Specialist	RI/FS
I-GW-3	9/20/90	K. Lyso	Bonneville Power Administration	Facilities Manager	Groundwater monitoring wells, tracking an unplanned release
I-GW-4	9/20/90	K. Lyso	Bonneville Power Administration	Warehouse Manager	Groundwater monitoring wells
I-GW-5	9/21/90	K. Lyso	Bonneville Power Administration	Hazardous Waste Manager	Groundwater monitoring plan - none in existence
I-GW-6	9/24/90	K. Lyso	Bonneville Power Administration	Environmental Specialist	Dry wells
I-GW-7	9/24/90	K. Lyso	Bonneville Power Administration	Mechanical Engineer	Dry wells
I-GW-8	9/25/90	K. Lyso	Bonneville Power Administration	Chief, Operations	Substations
I-GW-9	9/25/90	K. Lyso	Bonneville Power Administration	Environmental Specialist	Groundwater, Groundwater monitoring plan
I-GW-10	9/26/90	K. Lyso	Bonneville Power Administration	Hazardous Waste Manager	Groundwater protection plan
I-GW-11	9/26/90	K. Lyso	Bonneville Power Administration	Facilities Manager	Dry wells
I-GW-12	9/26/90	K. Lyso	Bonneville Power Administration	Environmental Specialist	Groundwater monitoring protection plan

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-WM-1	9/20/90	J. English	MKSG	Foreman	Maintenance and construction shops
I-WM-2	9/20/90	J. English	LDN	Facility Manager	Maintenance and construction shops
I-WM-3	9/21/90	J. English	LDSR	Foreman	Substation maintenance
I-WM-4	9/21/90	J. English	LDSQ	Foreman	Untanking tower
I-WM-5	9/21/90	J. English	ELMC	Lab Manager	Chemical laboratory
I-WM-6	9/21/90	J. English	MMNE	Foreman	Ross garage
I-WM-7	9/21/90	J. English	LDN	Hazardous Waste Coordinator	Buildings 772, 482, and 814
I-WM-8	9/21/90	J. English	SRMF	Supervisor	Hazardous waste management
I-WM-9	9/25/90	J. English	LDST	Supervisor	Troutdale substation
I-WM-10	9/25/90	J. English	LD	Environmental Specialist	Troutdale, Acton, North Bonneville, and Camas substations
I-WM-11	9/26/90	J. English	AJ	Environmental Specialist	Spill reporting, waste notification
I-WM-12	9/26/90	J. English	AJ	Environmental Specialist	Spill reporting, waste notification
I-WM-13	9/26/90	J. English	AJ	Environmental Specialist	Spill containment appraisal

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-TSCA-1	9/20/90	J. Crist	Ross - SRMF	Chief, USD Unit	PCB Records
I-TSCA-2	9/20/90	J. Crist	AJ - 7S9		PCB Records
I-TSCA-3	9/20/90	J. Crist	Ross - SRMF		PCB Records
I-TSCA-4	9/21/90	J. Crist	SRMF	Chief, USD Unit	PCB Records
I-TSCA-5	9/21/90	J. Crist	Ross - SRMF		PCB Records
I-TSCA-6	9/21/90	J. Crist	Ross - MMNC	Environmental Specialist	PCB Records
I-TSCA-7	9/24/90	J. Crist	SRMF	Chief, USD Unit	PCB Inspection
I-TSCA-8	9/24/90	J. Crist	AJ - 7S9		PCB Inspection
I-TSCA-9	9/24/90	J. Crist	Ross - SRMF		PCB Inspection
I-TSCA-10	9/24/90	J. Crist	Ross - LDN	Hazardous Waste Manager	PCB Inspection
I-TSCA-11	9/24/90	J. Crist	Ross - ELEC		PCB Inspection
I-TSCA-12	9/24/90	J. Crist	Ross - LDOR	Substation Maintenance	PCB Inspection
I-TSCA-13	9/24/90	J. Crist	Ross - LDOR	Chief of Operations Substations	PCB Inspection
I-TSCA-14	9/24/90	J. Crist	Ross - ELEC		PCB Inspection
I-TSCA-15	9/24/90	J. Crist	Ross - LDSR		PCB Inspection
I-TSCA-16	9/24/90	J. Crist	Ross - SRMC	Chief, Warehouse Unit	PCB Inspection
I-TSCA-17	9/24/90	J. Crist	Ross - SRMA	Chief, Supply Operations Section	PCB Inspection
I-TSCA-18	9/24/90	J. Crist	Ross - SRMA		PCB Inspection
I-TSCA-19	9/25/90	J. Crist	Ross - LDOR	Chief of Operations Substations	4 remote substations visits

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-TSCA-20	9/25/90	J. Crist	Lower Columbia Area	Environmental Specialist	4 remote substations visits
I-TSCA-21	9/25/90	J. Crist	Troutdale - LDOR	Substation Operator	Troutdale visit
I-TSCA-22	9/25/90	J. Crist	Troutdale - LDST	Substation Manager	Troutdale visit
I-TSCA-23	9/25/90	J. Crist	Keeler - LDOK	Senior Electrical Specialist	Troutdale visit
I-TSCA-24	9/25/90	J. Crist	LDOR	Substation Manager	North Bonneville visit
I-TSCA-25	9/26/90	J. Crist	LD	Environmental Coordinator	Longview visit
I-TSCA-26	9/26/90	J. Crist	Ross - LDOR	Chief of Operations Substations	Revisit to Ross substation
			Ross - LDOR	Substation Maintenance	
I-TSCA-27	10/1/90	J. Crist	Ross - LDOR	Chief of Operations Substations	Storage of spare capacitors
I-TSCA-28	10/1/90	J. Crist	Ross - LDN	Hazardous Waste Manager	Accurate count of capacitors
I-TSCA-29	10/2/90	J. Crist	Ross	Chief, Environmental Protection Section	Storage for disposal facilities

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-FIFRA-1	9/25/90	M. Notich			FIFRA
I-FIFRA-2	9/25/90	M. Notich			FIFRA
I-FIFRA-3	9/25/90	M. Notich	Utilization and Disposal	Chief	FIFRA
I-FIFRA-4	9/25/90	M. Notich	Bonneville Power Administration	Facilities Manager	FIFRA
I-FIFRA-5	9/25/90	M. Notich	Transmission Line Maintenance Group	Electrical Engineer	FIFRA

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-QA-1	9/24/90	M. Notich	Bonneville Power Administration Chemical Laboratory	Chief of Chemical Laboratory	Laboratory QA
I-QA-2	9/24/90	M. Notich	Bonneville Power Administration Chemical Laboratory	Chemist	Laboratory QA
I-QA-3	9/24/90	M. Notich	Bonneville Power Administration Chemical Laboratory	Physical Science Technician	Laboratory QA
I-QA-4	9/25/90	M. Notich	Bonneville Power Administration Procurement	Purchasing Agent	Subcontract QA requirements
I-QA-5	9/25/90	M. Notich	Bonneville Power Administration Construction Contracting	Contracting Officer	Subcontract QA requirements
I-QA-6	9/25/90	M. Notich	Bonneville Power Administration Construction Contracting	Contracting Officer	Subcontract QA requirements
I-QA-7	9/26/90	M. Notich	Lower Columbia Area Officer	Environmental Coordinator	Project QA
I-QA-8	9/26/90	M. Notich	APTUS	Project Manager	Cleanup Project QA
I-QA-9	9/27/90	M. Notich	Bonneville Power Administration Utilization and Disposal Department	Chief	Hazardous Waste Sampling

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-QA-10	9/27/90	M. Notich	Bonneville Power Administration Environmental Protection Section	Environmental Specialist	Drinking Water Well Sampling

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-IWS-1	9/20/90	M. Letourneau	Bonneville Power Administration	Environmental Specialist	Review groundwater data
I-IWS-2	9/20/90	M. Letourneau	Bonneville Power Administration	Hazardous Waste Manager	
			Bonneville Power Administration	Environmental Specialist	Review RI/FS plans and milestones
			Bonneville Power Administration	Hazardous Waste Manager	
I-IWS-3	9/21/90	M. Letourneau	Bonneville Power Administration	Hazardous Waste Coordinator	Tour of Chemical Storage Area (814 Building)
			Bonneville Power Administration	Hazardous Waste Manager	
I-IWS-4	9/21/90	M. Letourneau	Bonneville Power Administration	Supervisor, Utilization and Disposal	U and D Spills/Waste Handling
I-IWS-5	9/24/90	M. Letourneau	Bonneville Power Administration	Environmental Specialist	Troutdale PA and Troutdale/Reynolds Landfill site
I-IWS-6	9/24/90	M. Letourneau	Bonneville Power Administration	Environmental Specialist	USTs/Dry wells
I-IWS-7	9/24/90	M. Letourneau	Bonneville Power Administration	Facility Manager	USTs
I-IWS-8	9/25/90	M. Letourneau	Bonneville Power Administration	Environmental Specialist	Troutdale tour/remediation
I-IWS-9	9/25/90	M. Letourneau	Bonneville Power Administration	Supervisor, Utilization and Disposal	Spills reporting and cleanup procedures
			Bonneville Power Administration	Hazardous Waste Manager	
			Bonneville Power Administration	Environmental Specialist	

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-IUS-10	9/26/90	M. Letourneau	Bonneville Power Administration	Area Environmental Coordinator	Longview Substation tour/remediation
			Bonneville Power Administration	Facility Manager	
I-IUS-11	9/26/90	M. Letourneau	Bonneville Power Administration	Facility Manager	USTs/Dry wells
			Bonneville Power Administration	Environmental Specialist	
I-IUS-12	9/27/90	M. Letourneau	Bonneville Power Administration	Facility Manager	GPR demonstration/ search for dry well at Aspere and Mystery well casing
			Bonneville Power Administration	Hazardous Waste Manager	
I-IUS-13	9/27/90	M. Letourneau	Washington Department of Ecology	Project Coordinator	Model Toxics Control Act Regulations

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-SARA-1	9/17/90	C. Barber	EPA Emergency Preparedness Hotline	EPA Emergency Preparedness Information Specialist	SARA Title III exemptions
I-SARA-2	9/17/90	C. Barber	EPA Region X	SARA Title III Specialist	SARA Title III exemptions
I-SARA-3	9/20/90	C. Barber	Bonneville Power Administration	Chief, Materials Laboratory	MSDS, Inventories for on-site materials
I-SARA-4	9/20/90	C. Barber	Bonneville Power Administration	Facilities Management Specialist	Battery room tour
I-SARA-5	9/20/90	C. Barber	Bonneville Power Administration	Chief, Chemistry Laboratory Section	Chemical Laboratory tour
I-SARA-6	9/20/90	C. Barber	Bonneville Power Administration	Chief, Materials Management Branch	Inventory Control System
			Bonneville Power Administration	Chief, Supply Operations Section	
			Bonneville Power Administration	Chief, Transmission & Work Equipment Unit	
I-SARA-7	9/21/90	C. Barber	Bonneville Power Administration	Buildings and Grounds Manager	SARA Title III Compliance
I-SARA-8	9/26/90	C. Barber	Bonneville Power Administration	Facilities Management Specialist	Battery room tour

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-MGT-1	9/20/90	D. Wunsch	Bonneville Power Administration	Assistant to the Administrator for Internal Audit	BPA Internal Audit System and environmental issues
I-MGT-2	9/20/90	D. Wunsch	Bonneville Power Administration	Assistant to the Administrator for Environment	Environmental management, organization structure and oversight
I-MGT-3	9/20/90	D. Wunsch	Bonneville Power Administration	Senior Environmental Specialist	Appraisal program and environmental audits
I-MGT-4	9/21/90	D. Wunsch	Operations & Maintenance Lower Columbia Area	Facilities Manager	Environmental responsibilities at Ross Complex
I-MGT-5	9/21/90	D. Wunsch	Bonneville Power Administration	Assistant to the Administrator for Environment	Environmental management and DOE Orders
I-MGT-6	9/24/90	D. Wunsch	Office of Management Services	Management Analysis Manager	Flow of DOE Orders
I-MGT-7	9/24/90	D. Wunsch	Bonneville Power Administration	Assistant to the Administrator for Environment	Policies development and implementation
I-MGT-8	9/24/90	D. Wunsch	Operations & Maintenance Lower Columbia Area	Area Environmental Coordinator	Area environmental responsibilities
I-MGT-9	9/25/90	D. Wunsch	Operations & Maintenance Lower Columbia Area	Facilities Manager	Ross environmental responsibilities

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-MGT-10	9/25/90	D. Wunsch	Operations & Maintenance Lower Columbia Area	Assistant Area Manager	Area and Ross environmental responsibilities

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE AUDIT TEAM

REFERENCE NUMBER	DATE	AUDITOR	ORGANIZATION	POSITION	TOPIC
I-SA-1	9/21/90	C. Barber	Bonneville Power Administration	Buildings and Grounds Manager	Internal audits
I-SA-2	9/25/90	C. Barber	Bonneville Power Administration	Environmental Specialist	Engineering Environmental Appraisal Program
I-SA-3	9/25/90	C. Barber	Bonneville Power Administration	Hazardous Waste Manager	Regulatory/audit training
I-SA-4	9/25/90	C. Barber	Bonneville Power Administration	Senior Environmental Specialist	Field Appraisal planning
I-SA-5	9/27/90	C. Barber	Bonneville Power Administration	Buildings and Grounds Manager	Internal audits

APPENDIX E
COMPLIANCE AGREEMENT
AND
MEMORANDUM OF AGREEMENT

COMPLIANCE AGREEMENT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION 10
AND THE
WASHINGTON STATE DEPARTMENT OF ECOLOGY
AND THE
BONNEVILLE POWER ADMINISTRATION

IN THE MATTER OF:

The U.S. Department of Energy,
Bonneville Power Administration,
Ross Complex,

Vancouver, Washington,

)
) FEDERAL FACILITY AGREEMENT
) UNDER CERCLA SECTION 120
)

) Administrative Docket Number:
) 1089-07-17-120
)

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Based on the information available to the Parties on the effective date of this Federal Facility Agreement ("Agreement"), and without trial or adjudication of any issues of fact or law, the Parties agree as follows:

I. JURISDICTION

Each Party is entering into this Agreement pursuant to the following authorities:

1.1 The United States Environmental Protection Agency ("U.S. EPA"), Region 10, enters into those portions of this Agreement that relate to the Remedial Investigation/ Feasibility Study ("RI/FS") pursuant to Section 120(e)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9620(e)(1), as amended by the Superfund Amendments and Reauthorization Act of 1986 ("SARA"), Pub. L. 99-499, Sections 6001, 3008(h), and 3004(u) and (v) of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. §§ 6961, 6928(h), 6924(u) and (v), as amended by the Hazardous and Solid Waste Amendments of 1984 ("HSWA") (hereinafter referred to as RCRA), and Executive Order 12580;

1.2 U.S. EPA enters into those portions of this Agreement that relate to interim remedial actions and final remedial actions pursuant to Section 120(e)(2) of CERCLA, Sections 6001, 3008(h), and 3004(u) and (v) of RCRA, 42 U.S.C. § 6961, 6928(h), 6924(u) and (v), and Executive Order 12580;

1.3 The Bonneville Power Administration ("BPA") enters into those portions of this Agreement that relate to the RI/FS pursuant to Section 120(e)(1) of CERCLA, 42 U.S.C. § 9620(e)(1), Sections 6001, 3008(h), and 3004(u) and (v) of RCRA, 42 U.S.C. §§ 6961, 6928(h), and 6924(u) and (v), Executive Order 12580, and the National Environmental Policy Act, 42 U.S.C. § 4321;

1 1.4 BPA enters into those portions of this
2 Agreement that relate to interim remedial actions and final
3 remedial actions pursuant to Section 120(e)(2) of CERCLA, 42 U.S.C.
4 § 9620(e)(2), and Executive Order 12580;

5 1.5 The State of Washington Department of Ecology
6 ("Ecology") enters into this Agreement pursuant to Sections 107,
7 120(e)(2), 120(f), and 121(f) of CERCLA, 42 U.S.C. §§ 9607,
8 9620(e)(2), 9620(f), and 9621(f), and Titles 70 and 43 of the
9 Revised Code of Washington.

10
11 II. DEFINITIONS

12 2.1 The terms used in this Agreement shall have
13 the same meaning as defined in Section 101 of CERCLA, 42 U.S.C.
14 § 4601, the NCP, 40 CFR Part 300, and Section 1004 of RCRA,
15 42 U.S.C. § 6903. In addition:

16 (a) "Agreement" shall mean this document and shall
17 include all Attachments to this document. All such Attachments
18 shall be incorporated by reference and are an integral and
19 enforceable part of this document;

20 (b) "ARAR" or "Applicable or Relevant and Appropriate
21 Requirements" shall mean any standard, requirement, criteria, or
22 limitation as provided in Section 121(d)(2) of CERCLA, 42 U.S.C.
23 § 9621(d)(2);

24 (c) "Authorized representative" may include a Party's
25 contractors or any other designee;

26 (d) "BPA" shall mean the Bonneville Power

1 Administration, an agency of the United States within the
2 Department of Energy ("U.S. DOE") and, to the extent necessary to
3 effectuate the terms of this Agreement (including congressional
4 reporting requirements), BPA employees, contractors, agents,
5 successors, assigns, and authorized representatives;

6 (e) "CERCLA" shall mean the Comprehensive Environmental
7 Response, Compensation, and Liability Act, 42 U.S.C. § 9601 et
8 seq., as amended by the Superfund Amendments and Reauthorization
9 Act of 1986 ("SARA"), Pub. L. 99-499;

10 (f) "Days" shall mean calendar days, unless otherwise
11 specified. Any submittal that under the terms of this Agreement
12 would be due on a Saturday, Sunday, or federal holiday shall be
13 due on the following business day;

14 (g) "Ecology" shall mean the State of Washington as
15 represented by the Department of Ecology, its employees, and
16 authorized representatives;

17 (h) "Interim Remedial Actions" or "IRA" shall mean all
18 discrete response actions implemented prior to a final remedial
19 action which are taken to prevent or minimize the release of
20 hazardous substances, pollutants, or contaminants so that they do
21 not migrate or endanger public health, welfare, or the environment.
22 All interim remedial actions shall be undertaken in accordance with
23 the NCP, 40 C.F.R. Part 300, as amended, and with the requirements
24 of CERCLA;

25 (i) "NCP" shall mean the National Oil and Hazardous
26 Substances Pollution Contingency Plan, 40 C.F.R. Part 300, as

1 amended;

2 (j) "Paragraph" shall mean a numbered paragraph of this
3 Agreement, designated by an Arabic numeral;

4 (k) "Part" shall mean one of the thirty-seven (37)
5 subdivisions of this Agreement, designated by a Roman numeral;

6 (l) "Parties" shall mean BPA, U.S. EPA, and Ecology.

7 (m) "RCRA" shall mean the Resource Conservation and
8 Recovery Act, 42 U.S.C. § 6901 et seq., as amended by the Hazardous
9 and Solid Waste Amendments of 1984 ("HSWA"), Pub. L. 98-616;

10 (n) "Site" shall mean the two hundred (200) acre BPA
11 Ross Complex, located at 5411 N.E. Highway 99, Vancouver,
12 Washington, and any off-Complex area contaminated by the migration
13 of hazardous substances, pollutants, or contaminants originating
14 from BPA;

(o) "U.S. DOE" shall mean the United States Department
16 of Energy and, to the extent necessary to effectuate the terms of
17 this Agreement (including appropriations and congressional
18 reporting requirements), its employees, contractors, agents,
19 successors, assigns, and authorized representatives;

20 (p) "U.S. EPA" shall mean the United States
21 Environmental Protection Agency, including Region 10, its
22 employees, and authorized representatives; and

23 (q) "Work Plan" shall mean the final RI/FS or Remedial
24 Design/Remedial Action ("RD/RA") Work Plans, incorporated herein
25 by reference, which are prepared in accordance with Office of Solid
26 Waste and Emergency Response ("OSWER") Directives 9355.3.-01

October 1988) and 9355.0-4A (June 1986), and the NCP.

III. PURPOSE

3.1 The general purposes of this Agreement are to:

(a) Ensure that the environmental impacts associated with past and present activities at the Site are thoroughly investigated, and appropriate removal and/or remedial action(s) taken as necessary to protect the public health, welfare, and the environment;

(b) Establish a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions at the Site in accordance with CERCLA, the NCP, Superfund guidance and policy, RCRA, RCRA guidance and policy; and,

(c) Facilitate cooperation, exchange of information, and participation of the Parties in such actions.

3.2 Specifically, the purposes of this Agreement are to:

(a) Identify removal and Interim Remedial Action ("IRA") alternatives which are appropriate at the Site prior to the implementation of final remedial action(s) for the Site. IRA alternatives shall be identified and proposed to the Parties as early as possible prior to formal proposal of IRA(s) to U.S. EPA pursuant to CERCLA. This process is designed to promote cooperation among the Parties in identifying IRA alternatives prior to selection of final IRA(s);

1 (b) Establish requirements for the performance of an
2 RI to determine fully the nature and extent of the threat to the
3 public health or welfare or the environment caused by the release
4 and threatened release of hazardous substances, pollutants, or
5 contaminants at the Site, and to establish requirements for the
6 performance of an FS for the Site to identify, evaluate, and select
7 alternatives for the appropriate remedial action(s) to prevent,
8 mitigate, or abate the release or threatened release of hazardous
9 substances, pollutants, or contaminants at the Site in accordance
10 with CERCLA;

11 (c) Identify the nature, objective, and schedule of
12 response actions to be taken at the Site. Response actions at the
13 Site shall attain that degree of cleanup of hazardous substances,
14 pollutants, or contaminants mandated by CERCLA;

15 (d) Implement the selected interim and final remedial
16 action(s) in accordance with CERCLA and meet the requirements of
17 Section 120(e)(2) of CERCLA, 42 U.S.C. § 9620(e)(2), for an
18 interagency agreement between U.S. EPA and BPA;

19 (e) Assure compliance, through this Agreement, with
20 other federal and state hazardous waste laws and regulations for
21 matters covered herein;

22 (f) Coordinate response actions with the mission and
23 support activities at the Site;

24 (g) Expedite the cleanup process to the extent
25 consistent with protection of human health and the environment;
26 and

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1 (h) Provide Ecology involvement in the initiation,
2 development, and selection of remedial actions to be undertaken at
3 the Site, including the review of all applicable data as it becomes
4 available, and the development of studies, reports, and actions
5 plans; and to identify and integrate state ARARs into the remedial
6 action process.

8 IV. PARTIES BOUND

9 4.1 This Agreement shall apply to and be binding
10 upon BPA, U.S. EPA, and the State of Washington. This Agreement
11 shall also apply to subsequent owners and operators of any portion
12 of the Site. BPA agrees to include notice of this Agreement in any
13 document transferring ownership of property owned by the United
14 States to any subsequent owners and operators of any portion of the
15 Site in accordance with Section 120(h) of CERCLA, 40 U.S.C. §
16 120(h), and Part XXXII of this Agreement.

17 4.2 BPA will notify U.S. EPA and Ecology of the
18 identity of its contractors performing work under this Agreement.
19 BPA shall provide copies of this Agreement to all contractors
20 performing any work pursuant to this Agreement.

21 4.3 Under no condition shall a Party under this
22 Agreement utilize the services of any consultant, prime contractor,
23 or subcontractor who has been suspended, debarred, or voluntarily
24 excluded within the scope of 40 C.F.R. Part 32 or under the Federal
25 Acquisition regulations at 48 C.F.R. Subpart 9.4 et seq.

26 4.4 Each undersigned representative of a Party

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1 certifies that he or she is fully authorized to enter into the
2 terms and conditions of this Agreement and to legally bind such
3 Party to this Agreement.

4
5 V. STATUTORY COMPLIANCE

6 5.1 The Parties intend to integrate BPA's CERCLA
7 response obligations and corrective action obligations of other
8 statutes which relate to the release(s) of hazardous substances,
9 hazardous wastes, pollutants, or contaminants covered by this
10 Agreement into this comprehensive Agreement. Therefore, the
11 Parties intend that activities covered by this Agreement will
12 achieve compliance with CERCLA, 42 U.S.C. 9601, et seq.; to satisfy
13 the corrective action requirements of Sections 3004(u) and (v) of
14 RCRA, 42 U.S.C. §6924(u) and (v), for a RCRA permit, and Section
15 3008(h), 42 U.S.C. §6928(h), for interim status facilities; and
16 meet or exceed all applicable or relevant and appropriate federal
17 and state laws and regulations, to the extent required by Section
18 121 of CERCLA, 42 U.S.C. § 9621, and applicable state law.

19 5.2. Based upon the foregoing, the Parties intend
20 that any remedial action selected, implemented, and completed under
21 this Agreement will be protective of human health and the
22 environment such that remediation of releases covered by this
23 Agreement shall obviate the need for further corrective action.
24 The Parties agree that with respect to releases of hazardous waste
25 covered by this Agreement that have occurred on a site, RCRA and
26 Ch. 70.105 et seq. of the Revised Code of Washington ("RCW") shall

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be considered ARARs pursuant to Section 121 of CERCLA, 42 U.S.C. § 9621. If RCRA or RCW Ch. 70.105 et seq. ARARs are waived by the Record of Decision ("ROD") pursuant to Section 121 of CERCLA, 42 U.S.C. § 9621, Ecology shall have the right to withdraw from this Agreement within sixty (60) days following the effective date of the ROD and exercise any legal rights and remedies available under law. If Ecology exercises its right to withdraw from this Agreement, BPA expressly preserves its ability to assert any defense that it may have under the law in regard to the legal right or remedies pursued by Ecology. Releases or other hazardous waste activities not covered by this Agreement remain subject to all applicable state and federal environmental requirements.

5.3 The Parties recognize that the requirement to obtain permits for response actions undertaken pursuant to this Agreement shall be as provided for in CERCLA and the NCP.

5.4. Nothing in this Agreement shall alter BPA's authority with respect to removal actions conducted pursuant to Section 104 of CERCLA, 42 U.S.C. § 9604.

VI. FINDINGS OF FACT

6.1 For purposes of this Agreement, the following constitutes a summary of the facts as determined by U.S. EPA and Ecology upon which this Agreement is based. None of the facts related herein are admissions nor are they legally binding upon any Party with respect to any unrelated claims of persons not a Party to this Agreement.

6.2 BPA's Ross Complex ("Site") is situated on a sedimentary terrace between two (2) small streams. These streams, Burnt Bridge Creek and Cold Creek, form topographic boundaries for the northern and southwest portions of the Site. The Site is the control center for the transmission of electricity throughout the Pacific Northwest. Since its acquisition in 1939, the Site has provided research and testing facilities, as well as maintenance and operations capabilities for BPA. Maintenance activities at the Site routinely involve handling transformer oils containing polychlorinated biphenyls ("PCB"); organic and inorganic compounds associated with the storage of wood transmission poles; and paints, solvents, and waste oils. Testing and laboratory activities included using heavy metals, such as mercury, and other organic and inorganic compounds. Both active and inactive waste handling, storage, and disposal units exist on the Site.

6.3 The Site Inspection Report dated July 1989 focused on four (4) waste units (three inactive and one active) identified in the Preliminary Assessment dated April 1986 as requiring further investigation and four (4) additional waste units (all active) later included in the sampling effort to support RCRA requirements. These waste units include:

- (a) Fog Chamber Dump
- (b) District Operations Building No. 1 (DOB-1)
- (c) Sanitary Drainfield (DOB-2)
- (d) Top Coat Test Area
- (e) Cold Creek Fill Area

1 (f) Two Wood Pole Storage Areas (east/south)

2 (g) Capacitor Testing Laboratory

3 (h) DOB-1 Drainline

4 6.4 Analysis of groundwater samples from test
5 wells on the Site confirm the presence of 1,1,1-TCA, 1,1-DCE,
6 and/or chloroform in the Troutdale aquifer in the western portion
7 of the Complex and in perched-water zones along Cold Creek.

8 6.5 On July 14, 1989, the Site was proposed for
9 inclusion on the National Priorities List ("NPL"). 54 Fed. Reg.
10 29,820 (July 14, 1989). It was listed on November 21, 1989. 54
11 Fed. Reg. 48,184 (November 21, 1989).

12
13 VII. REGULATORY DETERMINATIONS

14 7.1 For purposes of this Agreement, the following
15 constitutes a summary of the Regulatory Determinations of U.S. EPA
16 and Ecology, upon which this Agreement is based. None of the
17 Regulatory Determinations related herein are admissions nor are
18 they legally binding upon any party with respect to any unrelated
19 claims of person(s) not a party to this Agreement.

20 7.2 BPA Ross Complex is a Site within the meaning
21 of Sections 3008 of RCRA and 101(9) of CERCLA, 42 U.S.C. §§ 6928
22 and 9601(9).

23 7.3 Hazardous substances, pollutants, or
24 contaminants within the meaning of Sections 1004(5) and 3001 of
25 RCRA and 101(14) and 104(a)(2) of CERCLA, 42 U.S.C. §§ 6903(5),
26 6921, 9601(14) and 9604(a)(2), have been disposed of at the Site.

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1 7.4 There have been releases and there may be
continuing releases and threatened releases of hazardous
3 substances, pollutants, or contaminants into the environment within
4 the meaning of Sections 101(22), 104, 106, and 107 of CERCLA,
5 42 U.S.C. §§ 9601(22), 9604, 9606, and 9607, at and from the Site.

6 7.5 With respect to those releases and threatened
7 releases, BPA is an owner of a facility under Section 107 of
8 CERCLA, 42 U.S.C. § 9607, and is subject to RCRA in accordance with
9 Section 6001, 42 U.S.C. § 6961.

10 7.6 The actions to be taken pursuant to this
11 Agreement are reasonable and necessary to protect the public health
12 or welfare or the environment; and

13 7.7 A reasonable time for beginning and/or
14 completing the actions has been provided.

16 VIII. SCOPE OF AGREEMENT

17 A. Work to be Performed

18 8.1 BPA will conduct and finance the cost of the
19 RI/FS consultant study in accordance with the RI/FS Work Plan and
20 implement the RD/RA at the Site in accordance with the RD/RA Work
21 Plan, and all relevant statutes, regulations, policies, guidance,
22 and criteria.

23 8.2 All work performed pursuant to this Agreement
24 shall be under the direction and supervision of, or in consultation
25 with, a qualified engineer, geologist, or equivalent expert with
26 expertise in hazardous substances site investigation and

remediation.

8.3 BPA shall perform the tasks and submit plans, reports, and other documents as required by those provisions of the Work Plans.

8.4 These matters are set forth in more detail below and in the RI/FS and RD/RA Work Plans. This Agreement fully incorporates the provisions of the Work Plans which relate to the implementation of this Agreement, including, but not limited to, definitions and procedures for submission, review, and approval of documents. In the event of any inconsistency between this Agreement and the Work Plan, this Agreement shall govern unless and until duly amended pursuant to Part XXXIII of this Agreement.

B. Interim Remedial Actions

8.5 If required, BPA shall develop and implement Interim Remedial Actions ("IRAs"), set forth in the RI/FS Work Plan and pursuant to Part XX. The IRA(s) shall be consistent with the purposes set forth in Part III of this Agreement.

C. Remedial Investigations

8.6 BPA shall develop, implement, and report upon a remedial investigation of the Site which complies with applicable requirements of CERCLA, the NCP, and pertinent written guidance and established written U.S. EPA policy, and which is in accordance with the requirements and time schedules set forth in this Agreement.

1 D. Feasibility Studies

2 8.7 BPA shall design, propose, undertake, and
3 report upon a feasibility study for the Site which complies with
4 applicable requirements of CERCLA, the NCP, and relevant guidance
5 and established U.S. EPA policy, and which is in accordance with
6 the requirements and time schedules set forth in this Agreement.

7 E. Remedial Actions

8 8.8 BPA shall develop and submit its proposed
9 remedial action alternative following completion and approval of
10 an RI and FS. Ecology may recommend the remedial action
11 alternative it deems appropriate to U.S. EPA. The selection of
12 Remedial Action for the Site shall be made by the Administrator of
13 BPA and the Regional Administrator of U.S. EPA, in consultation
14 with Ecology; or, if the Administrator of BPA and the Regional
15 Administrator of U.S. EPA are unable to reach an Agreement, by the
16 Administrator of U.S. EPA. The final selection of remedial
17 action(s) by the U.S. EPA Administrator shall be final and not
18 subject to dispute. Notwithstanding this Part, or any other Part
19 of this Agreement, Ecology does not waive any right to seek
20 judicial review of an interim or final remedial action in
21 accordance with Sections 113 and 121 of CERCLA, 42 U.S.C. §§ 9613
22 and 9621.

23
24 IX. PROJECT MANAGERS

25 9.1 Not later than five (5) days after the
26 effective date of this Agreement, BPA, Ecology, and U.S. EPA shall

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1 each designate a Project Manager and alternate. Each Project
2 Manager shall be responsible for overseeing his principal's duties
3 concerning the implementation of this Agreement. All written
4 communications between BPA and the regulatory agencies (including
5 communication by letter, reports, notices, etc.) concerning
6 activities related to this Agreement shall be directed or a copy
7 sent to the appropriate Project Manager(s).

8 9.2 Each Project Manager shall be, or rely on, a
9 qualified and competent person with experience in hazardous
10 substances site investigations and remedial actions and having the
11 skills necessary to implement this Agreement.

12 9.3 BPA, Ecology, and U.S. EPA may change their
13 respective Project Manager(s) by sending a written notification to
14 the other Parties no later than five (5) days before the date of
15 such change.

16 9.4 The Project Managers may, in accordance with
17 Part XX(J) of this Agreement, make modifications to the work to be
18 performed pursuant to this Agreement, or in techniques, procedures,
19 or design utilized in carrying out this Agreement, which are
20 necessary to the completion of the project.

21 9.5 The Project Managers for BPA shall be
22 physically present on the Site or reasonably available to supervise
23 work performed at the Site during implementation of the work
24 performed pursuant to this Agreement and be available to the U.S.
25 EPA and Ecology Project Managers for the pendency of this
26 Agreement. The absence of the regulatory agency Project Managers

1 from the Site shall not be cause for work stoppage or delay.

3 X. ACCESS

4 10.1 Consistent with any authority conferred on
5 them by law, the U.S. EPA, Ecology, and/or their authorized
6 representatives, shall have authority to enter the Site at all
7 reasonable times for the purposes of, among other things: (1)
8 inspecting records, operating logs, contracts, and other documents
9 relevant to implementation of this Agreement; (2) reviewing the
10 progress of BPA, its response action contractors, or agents in
11 implementing this Agreement; (3) conducting such tests as Ecology
12 and U.S. EPA Project Managers reasonably determine are necessary
13 to implement this Agreement; and (4) verifying the data submitted
14 to U.S. EPA and Ecology by BPA. BPA shall honor all requests for
15 such access by U.S. EPA and Ecology, subject to any statutory or
16 regulatory requirement as may be necessary to protect
17 mission-essential activities. BPA reserves the right to provide
18 an escort, if available.

19 10.2 To the extent that this Agreement requires
20 access to property not owned and controlled by BPA, BPA shall, if
21 necessary, exercise its authorities to obtain access pursuant to
22 Section 104(e) of CERCLA, 42 U.S.C. § 9604(e), and shall make every
23 reasonable effort to obtain signed access agreements for itself,
24 its contractors, and agents, and provide U.S. EPA and Ecology with
25 copies of such agreements. With respect to non-BPA property upon
26 which monitoring wells, pumping wells, treatment facilities, or

other response actions are to be located, the access agreements to the extent possible shall also provide that no conveyance of title, easement, or other interest in the property shall be consummated without provisions for the continued operation of such wells, treatment facilities, or other response actions on the property. The access agreements shall also provide to the extent possible that the owners of any property where monitoring wells, pumping wells, treatment facilities, or other response actions are located shall notify BPA, Ecology, and the U.S. EPA by certified mail, at least thirty (30) days prior to any conveyance of the property owner's intent to convey any interest in the property and of the provisions made for the continued operation of the monitoring wells, treatment facilities, or other response actions installed pursuant to this Agreement.

XI. SAMPLING AND DATA/DOCUMENT AVAILABILITY

11.1 The Parties shall make available to each other quality assured results of sampling, tests, or other data generated by any Party, or on their behalf, with respect to the implementation of this Agreement within forty-five (45) days of their collection or field testing. If quality assurance is not completed within forty-five (45) days, preliminary data or results shall be made available within the forty-five (45) day period and quality assured data or results shall be submitted as they become available but in no event later than ninety (90) days after the sampling or testing. These periods can be extended upon mutual

1 agreement among the Project Managers.

2 11.2 At the request of either the Ecology or
3 U.S. EPA Project Manager, BPA shall allow split or duplicate
4 samples to be taken by Ecology or U.S. EPA during sample collection
5 conducted during the implementation of this Agreement. BPA's
6 Project Manager shall notify the U.S. EPA and Ecology Project
7 Managers not less than fourteen (14) business days in advance of
8 any well drilling, sample collection, or other monitoring activity,
9 conducted pursuant to this Agreement. The fourteen (14) day
10 notification can be waived upon mutual agreement among the Project
11 Managers for BPA, U.S. EPA, and Ecology.

12 11.3 If preliminary analysis indicates a potential
13 imminent and substantial endangerment to the public health, all
14 Project Managers shall be immediately notified.

15 XII. QUALITY ASSURANCE

17 12.1 Throughout all sample collection,
18 transportation, and analyses activities conducted in connection
19 with this Agreement, BPA shall use procedures for quality
20 assurance, and for quality control, and for chain-of-custody in
21 accordance with approved U.S. EPA methods, including "Interim
22 Guidelines and Specifications for Preparing Quality Assurance
23 Project Plans," QAMS-005/80, "Data Quality Objective Guidance,"
24 U.S. EPA 1540/687/003 and 004, and subsequent amendments to such
25 guidelines. BPA shall require each laboratory it uses to perform
26 any analysis according to approved U.S. EPA methods and to

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1 participate in a quality assurance/quality control program
2 equivalent to that which is followed by U.S. EPA and which is
3 consistent with U.S. EPA document QAMS-005/80.

4 5 XIII. REPORTING

6 13.1 BPA shall submit to Ecology and U.S. EPA
7 quarterly or, at the option of BPA, more frequent written progress
8 reports which describe the actions which BPA has taken during the
9 previous quarter to implement the requirements of this Agreement.
10 Progress reports shall also describe the activities scheduled to
11 be taken during the upcoming quarter. Progress reports shall be
12 prepared and submitted in accordance with the Work Plans.

13 14 XIV. NOTICE TO THE PARTIES

15 14.1 All Parties shall expeditiously transmit
16 primary and secondary documents, and all notices required herein.
17 Time limitations shall commence upon receipt.

18 14.2 Notice to the individual Parties shall be
19 provided under this Agreement to the following addresses:

20 (a) For BPA:
21 BPA Ross Complex Superfund Project Manager
22 Ross Complex
23 Bonneville Power Administration
24 P.O. Box 491
25 Vancouver, Washington 98666
26 (206) 690-2464

Express Mail:
5411 N.E. Highway 99
Dittmer Control Center
Vancouver, Washington 98666

(b) For U.S.-EPA:
BPA Ross Complex Project Manager
U.S. Environmental Protection Agency
1200 Sixth Avenue, HW-074
Seattle, Washington 98101
(206) 442-6635

BPA Ross Complex Project Manager
U.S. EPA Washington Operations Office
c/o Washington State Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504-8711
(206) 753-9014

Express Mail for U.S EPA Washington Operations
Office Only:
4415 Woodview Drive, S.W.
Lacey, Washington 98503

(c) For the State of Washington:
BPA Ross Complex Project Manager
Washington State Department of Ecology
Attn: Bob Goodman
Mail Stop PV-11
Olympia, Washington 98504-8711
(206) 438-3077

Express Mail:
4415 Woodview Drive, S.E.
Lacey, Washington 98503

(d) For the DOE:
c/o Bonneville Power Administration
1000 Independence Avenue, S.W.
Washington, D.C. 20585

XV. PERMITS

15.1 The Parties recognize that the requirement to obtain permits for response actions undertaken pursuant to this Agreement shall be as provided for in Section 121 (e) of CERCLA, 42 U.S.C. § 9621(e), and the NCP. The Parties further recognize ongoing hazardous waste management activities at the Site may require the issuance of permits under federal and state laws. This

1 Agreement does not affect the requirements, if any, to obtain such
2 permits. However, if a permit is issued for ongoing hazardous
3 waste management activities at the Site, U.S. EPA shall reference
4 and incorporate any appropriate provisions, including appropriate
5 schedules (and the provisions for extension of such schedules) of
6 this Agreement into such permit. The Parties intend that the
7 judicial review of any permit conditions which reference this
8 Agreement shall, to the extent authorized by law, only be reviewed
9 under the provisions of CERCLA.

10 15.2 If a permit which is necessary for
11 implementation of this Agreement is not issued, or is issued or
12 renewed in a manner which is materially inconsistent with the
13 requirements of this Agreement, BPA agrees it shall notify Ecology
14 and U.S. EPA of its intention to propose necessary modifications
15 to this Agreement to obtain conformance with the permit (or lack
16 thereof). Notification by BPA of its intention to propose
17 modifications shall be submitted within seven (7) calendar days of
18 receipt by BPA of notification that: (1) a permit will not be
19 issued; (2) a permit has been issued or reissued; or (3) a final
20 determination with respect to any appeal related to the issuance
21 of a permit has been entered. Within thirty (30) days from the
22 date it submits its notice of intention to propose modifications,
23 BPA shall submit to Ecology and U.S. EPA its proposed modifications
24 to this Agreement with an explanation of its reasons in support
25 thereof.

26 15.3 Ecology and U.S. EPA shall review BPA's

1 proposed modifications to this Agreement made pursuant to this
2 Part. If BPA submits proposed modifications prior to a final
3 determination of any appeal taken on a permit needed to implement
4 this Agreement, Ecology and U.S. EPA may elect to delay review of
5 the proposed modifications until after such final determination is
6 entered. If Ecology and U.S. EPA elect to delay review, BPA shall
7 continue implementation of this Agreement which can be reasonably
8 implemented pending final resolution of the permit issue(s).

9 15.4 During any appeal of any permit required to
10 implement this Agreement or during review of any of BPA's proposed
11 modifications as provided in Paragraph 15.2 above, BPA shall
12 continue to implement those portions of this Agreement which can
13 be reasonably implemented pending final resolution of the permit
14 issue(s).

16 XVI. RETENTION OF RECORDS

17 16.1 Despite any document retention policy to the
18 contrary, the Parties shall preserve, during the pendency of this
19 Agreement and for a minimum of seven (7) years after its
20 termination, all records and documents in their possession which
21 relate to the actions carried out pursuant to this Agreement.
22 After this seven (7) year period, each Party shall notify the other
23 Parties at least forty-five (45) days prior to destruction of any
24 such documents. Upon request by any Party, the requested Party
25 shall make available such records or copies of any such records,
26 unless withholding is authorized and determined appropriate by law.

1 XVII. PUBLIC PARTICIPATION AND ADMINISTRATIVE RECORD

2 17.1 The Parties agree that any subsequent proposed
3 plan considered for remedial action at the Site arising out of this
4 Agreement shall comply with public participation requirements of
5 Section 117 of CERCLA, 42 U.S.C. § 9617.

6 17.2 BPA agrees it shall establish and maintain an
7 Administrative Record at or near the Site in accordance with
8 Section 113(k) of CERCLA, 42 U.S.C. § 9613(k), and that a copy of
9 this Agreement shall be placed in the Administrative Record. The
10 Administrative Record developed by BPA shall be periodically
11 updated and a copy of each document included in each Administrative
12 Record will be provided to U.S. EPA and Ecology.

13 XVIII. CREATION OF DANGER/EMERGENCY ACTION

14 18.1 In the event U.S. EPA or Ecology determine
15 that activities conducted pursuant to this Agreement, or any other
16 circumstances or activities, are creating an imminent and
17 substantial endangerment to the health or welfare of the people on
18 the Site or in the surrounding area or to the environment, U.S. EPA
19 or Ecology may require or order BPA to stop further implementation
20 of this Agreement for twenty-four (24) hours or, upon agreement of
21 the Parties, such period of time as needed to abate the danger.
22 Any unilateral work stoppage for longer than twenty-four (24) hours
23 requires the concurrence of the U.S. EPA Division Director, in
24 accordance with Paragraph 21.9.

25 18.2 In the event BPA determines that activities
26 undertaken in furtherance of this Agreement or any other

1 circumstances or activities at the Site are creating an imminent
2 and substantial endangerment to the health or welfare of the people
3 on the Site or in the surrounding area or to the environment, BPA
4 may stop implementation of this Agreement for such periods of time
5 necessary for U.S. EPA to evaluate the situation and determine
6 whether BPA should proceed with implementation of the Agreement or
7 whether the work stoppage should be continued until the danger is
8 abated. BPA shall notify the Project Manager as soon as is
9 possible, but not later than twenty-four (24) hours after such
10 stoppage of work, and provide U.S. EPA with documentation of its
11 analysis in reaching this determination. If U.S. EPA disagrees
12 with the BPA determination, it may require BPA to resume
13 implementation of this Agreement.

14 18.3 If U.S. EPA concurs in the work stoppage by
15 BPA, or if U.S. EPA or Ecology require or order a work stoppage,
16 BPA's obligations shall be suspended and the time periods for
17 performance of that work, as well as the time period for any other
18 work dependent upon the work which was stopped, shall be extended,
19 pursuant to Part XXV of this Agreement. Any disagreements pursuant
20 to this Part shall be resolved through the dispute resolution
21 procedures in Part XXI of the Agreement by referral directly to the
22 DRC committee.

24 XIX. FIVE YEAR REVIEW

25 19.1 If a remedial action is selected that results
26 in any hazardous substances, pollutants, or contaminants remaining

1 at the Site, the Parties shall review such remedial action no less
2 often than each five (5) years after the initiation of such
3 remedial action to assure that human health and the environment are
4 being protected by the remedial action being implemented. The
5 U.S. EPA Project Manager and the Ecology Project Manager shall
6 advise the BPA Project Manager of their findings in this regard.
7 If BPA determines that additional action is required, the Agreement
8 may be amended pursuant to Part XXXIII. BPA determination under
9 this Part shall be subject to dispute resolution by the other
10 Parties.

11 XX. CONSULTATION WITH U.S. EPA AND ECOLOGY

12 A. Applicability

13 20.1 The provisions of this Part establish the
14 procedures that shall be used by BPA, U.S. EPA, and Ecology to
15 provide the Parties with appropriate notice, review, comment, and
16 response to comments regarding RI/FS and RD/RA documents, specified
17 herein as either primary or secondary documents. In accordance
18 with Section 120 of CERCLA, 42 U.S.C. § 9620, BPA will normally be
19 responsible for issuing primary and secondary documents to U.S. EPA
20 and Ecology. As of the effective date of this Agreement, all draft
21 and final reports for any deliverable document identified herein
22 shall be prepared, distributed, and subject to dispute in
23 accordance with Paragraphs 20.3 through 20.24.

24 20.2 The designation of a document as "draft" or
25 "final" is solely for purposes of consultation with U.S. EPA and
26 Ecology in accordance with this Part. Such designation does not

1 affect the obligation of the Parties to issue documents, which may
2 be referred to herein as "final," to the public for review and
3 comment as appropriate and as required by law.

4 B. General Process for RI/FS and RD/RA Documents

5 20.3 Primary documents include those reports that
6 are major, discrete portions of RI/FS or RD/RA activities. Primary
7 documents are initially issued by BPA in draft subject to review
8 and comment by U.S. EPA and Ecology. Following receipt of comments
9 on a particular draft primary document, BPA will respond to the
10 comments received and issue a draft final primary document subject
11 to dispute resolution. The draft final primary document will
12 become the final primary document either thirty (30) days after the
13 issuance of a draft final document if dispute resolution is not
14 invoked or as modified by decision of the dispute resolution
15 process.

16 20.4 Secondary documents include those reports that
17 are discrete portions of the primary documents and are typically
18 input or feeder documents. Secondary documents are issued by BPA
19 in draft subject to review and comment by U.S. EPA and Ecology.
20 Although BPA will respond to comments received, the draft secondary
21 documents may be finalized in the context of the corresponding
22 primary documents. A secondary document may be disputed at the
23 time the corresponding draft final primary document is issued.

24 C. Primary Reports

25 20.5 BPA shall complete and transmit draft reports
26 for the following primary documents to U.S. EPA and Ecology for
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1 review and comment in accordance with the provisions of this Part:

(a) Scope of Work

3 (b) RI/FS Work Plan, including the Sampling and
4 Analysis Plan, QAPP, Data Management Plan, Data
5 Quality Objectives, Community Relations Plan, and
6 Health and Safety Plan

(c) RI Report, including the Initial Screening of
7 Alternatives

(d) Baseline Risk Assessment

(e) FS Report

(f) Record of Decision ("ROD")

(g) Remedial Design ("RD")

(h) Remedial Action ("RA") Work Plan

12 20.6 Only the draft final reports for the primary
13 documents identified above shall be subject to dispute resolution.
14 BPA shall complete and transmit draft primary documents in
15 accordance with the timetable and deadlines established in Part
16 XXIV of this Agreement.

17 D. Secondary Documents

18 20.7 BPA shall complete and transmit draft reports
19 for the following secondary documents to U.S. EPA and Ecology for
20 review and comment in accordance with the provisions of this Part:

21 (a) Site Characterization Summary

22 (b) Risk Assessment Conceptual Site Model

23 (c) Detailed Analysis of Alternatives

24 (d) Identification of ARARs and TBC Evaluation

25 (e) Treatability Study Work Plan, as needed

26 (f) Treatability Studies Report, as needed

- (g) Sampling and Data Results
- (h) Proposed Plan
- (i) Proposed RA Work Plan
- (j) Conceptual RD Report
- (k) Sixty (60) Percent Completion RD Reports
- (l) Other items as Project Managers agree are needed.

20.8 Although U.S. EPA and Ecology may comment on the draft reports for the secondary documents listed above, such documents shall not be subject to dispute resolution except as provided by Paragraph 20.4. Target dates shall be established for the completion and transmission of draft secondary reports pursuant to Part XXIV of this Agreement. The purpose of target dates is to assist BPA in meeting deadlines, but target dates do not become enforceable and are not subject to Parts XXII, XXIII, XXIV, and/or XXV.

E. Meetings of the Project Managers on Development of Reports

20.9 The Project Managers shall meet approximately every thirty (30) days, except as otherwise agreed by the Parties, to review and discuss the progress of work being performed at the Site on the primary and secondary documents. Prior to preparing any draft report specified in Paragraphs 20.5 and 20.7 above, the Project Managers shall meet to discuss the report results in an effort to reach a common understanding, to the maximum extent practicable, with respect to the results to be presented in the draft report.

1 F. Identification and Determination of Potential ARARs

2 20.10 For those primary reports or secondary
3 documents that consist of or include ARAR determinations, prior to
4 the issuance of a draft report, the Project Managers shall meet to
5 identify and propose, to the best of their ability, all potential
6 ARARs pertinent to the report being addressed. Draft ARAR
7 determinations shall be prepared by BPA in accordance with Section
8 121(d)(2) of CERCLA, 42 U.S.C. § 9621(d)(2), the NCP, and pertinent
9 guidance issued by U.S. EPA and Ecology, which is not inconsistent
10 with CERCLA and the NCP.

11 20.11 In identifying potential ARARs, the Parties
12 recognize that actual ARARs can be identified only on a
13 site-specific basis and that ARARs depend on the specific hazardous
14 substances, pollutants, and contaminants at a site, the particular
15 actions proposed as a remedy, and the characteristics of a site.
16 The Parties recognize that ARAR identification is necessarily an
17 iterative process and that potential ARARs must be re-examined
18 throughout the RI/FS process until a ROD is issued.

19
20 G. Review and Comment on Draft Reports

21 20.12 BPA shall complete and transmit each draft
22 primary report to U.S. EPA and Ecology on or before the
23 corresponding deadline established for the issuance of the report.
24 BPA shall complete and transmit the draft secondary document in
25 accordance with the target dates established for the issuance of
26 such reports established pursuant to Part XXIV of this Agreement.

1 20.13 Unless the Parties mutually agree to another
2 time period, all draft reports shall be subject to a thirty (30)
3 day period for review and comment. Review of any document by U.S.
4 EPA or Ecology may concern all aspects of the report (including
5 completeness) and should include, but is not limited to, technical
6 evaluation of any aspect of the document, and consistency with
7 CERCLA, the NCP, and any pertinent guidance or policy issued by the
8 U.S. EPA or Ecology. Comments by U.S. EPA and Ecology shall be
9 provided with adequate specificity so that BPA may respond to the
10 comments and, if appropriate, make changes to the draft report.
11 Comments shall refer to any pertinent sources of authority or
12 references upon which the comments are based, and, upon request of
13 BPA, U.S. EPA and Ecology shall provide a copy of the cited
14 authority or reference. In cases involving complex or unusually
15 lengthy reports, U.S. EPA and Ecology may extend the thirty (30)
16 day comment period for an additional twenty (20) days by written
17 notice to BPA prior to the end of the thirty (30) day period. On
18 or before the close of the comment period, U.S. EPA and Ecology
19 shall transmit by next day mail their written comments to BPA.

20 20.14 Representatives of BPA shall make themselves
21 readily available to U.S. EPA and Ecology during the comment period
22 for purposes of informally responding to questions and comments on
23 draft reports. Oral comments made during such discussions need not
24 be the subject of a written response by BPA on the close of the
25 comment period.

26 20.15 In commenting on a draft report which contains

1 proposed ARAR determination, U.S. EPA and Ecology shall include
2 a reasoned statement of whether they object to any portion of the
3 proposed ARAR determination. To the extent that U.S. EPA and
4 Ecology do object, they shall explain the basis for their objection
5 in detail and shall identify any ARARs which they believe were not
6 properly addressed in the proposed ARAR determination.

7 20.16 Following the close of the comment period for
8 a draft report, BPA shall give full consideration to all written
9 comments on the draft report submitted during the comment period.
10 Within thirty (30) days of the close of the comment period on a
11 draft secondary report, BPA shall transmit to U.S. EPA and Ecology
12 its written response to comments received within the comment
13 period. Within thirty (30) days of the close of the comment period
14 on a draft primary report, BPA shall transmit to U.S. EPA and
15 Ecology a draft final primary report, which shall include BPA's
16 response to all written comments, received within the comment
17 period. While the resulting draft final report shall be the
18 responsibility of BPA, it shall be the product of consensus to the
19 maximum extent possible.

20 20.17 BPA may extend the thirty (30) day period for
21 either responding to comments on a draft report or for issuing the
22 draft final primary report for an additional twenty (20) days by
23 providing notice to U.S. EPA and Ecology. In appropriate
24 circumstances, this time period may be further extended in
25 accordance with Part XXV.
26

1 H. Availability of Dispute Resolution for
2 Draft Final Primary Documents

3 20.18 Dispute resolution shall be available to the
4 Parties for draft final primary reports as set forth in Part XXI.

5 20.19 When dispute resolution is invoked on a draft
6 primary report, work may be stopped in accordance with the
7 procedures set forth in Part XXI regarding dispute resolution.

8 I. Finalization of Reports:

9 20.20 The draft final primary report shall serve as
10 the final primary report if no Party invokes dispute resolution
11 regarding the document or, if invoked, at completion of the dispute
12 resolution process should BPA's position be sustained. If BPA's
13 determination is not sustained in the dispute resolution process,
14 BPA shall prepare, within not more than thirty-five (35) days, a
15 revision of the draft final report which conforms to the results
16 of dispute resolution. In appropriate circumstances, the time
17 period for this revision period may be extended in accordance with
18 Part XXV hereof.

19 J. Subsequent Modifications of Final Reports

20 20.21 Following finalization of any primary report
21 pursuant to Paragraph 20.20 above, U.S. EPA, Ecology, or BPA may
22 seek to modify the report, including seeking additional field work,
23 pilot studies, computer modeling, or other supporting technical
24 work, only as provided in Paragraphs 20.22 and 20.23.

25 20.22 U.S. EPA, Ecology, or BPA may seek to modify
26 a report after finalization if it determines, based on new

1 information (i.e., information that became available, or conditions
2 that became known, after the report was finalized) that the
3 requested modification is necessary. U.S. EPA, Ecology, or BPA may
4 seek such a modification by submitting a concise written request
5 to the Project Managers of the other Parties. The request shall
6 specify the nature of the requested modification and how the
7 request is based on new information.

8 20.23 In the event that a consensus among the
9 Parties is reached, the modification shall be incorporated by
10 reference and become fully enforceable under the Agreement pursuant
11 to Part XXXIII. In the event that a consensus is not reached by
12 the Project Managers on the need for a modification, either
13 U.S. EPA, Ecology, or BPA may invoke dispute resolution as provided
14 in Part XXI to determine if such modification shall be conducted.
15 Modification of a report shall be required only upon a showing
16 that: (1) the requested modification is based on significant new
17 information, and (2) the requested modification could be of
18 significant assistance in evaluating impacts on the public health
19 or the environment, in evaluating the selection of remedial
20 alternatives, or in protecting human health and the environment.

21 20.24 Nothing in this Subpart shall alter U.S. EPA's
22 or Ecology's ability to request the performance of additional work
23 which was not contemplated by this Agreement. BPA's obligation to
24 perform such work must be established by either a modification of
25 a report or document or by amendment to this Agreement.

XXI. RESOLUTION OF DISPUTES

21.1 Except as specifically set forth elsewhere in this Agreement, if a dispute arises under this Agreement, the procedures of this Part shall apply. All Parties to this Agreement shall make reasonable efforts to informally resolve disputes at the Project Manager or immediate supervisor level. If resolution cannot be achieved informally, the procedures of this Part shall be implemented to resolve a dispute.

21.2 Within thirty (30) days after: (1) the issuance of a draft final primary document pursuant to this Agreement; or (2) any action which leads to or generates a dispute, the disputing Party shall submit to the Dispute Resolution Committee ("DRC") a written statement of dispute setting forth the nature of the dispute, the work affected by the dispute, the disputing Party's position with respect to the dispute, and the technical, legal, or factual information the disputing Party is relying upon to support its position.

21.3 Prior to any Party's issuance of a written statement of dispute, the disputing Party shall engage the other Party in informal dispute resolution among the Project Managers and/or their immediate supervisors. During this informal dispute resolution period the Parties shall meet as many times as are necessary to discuss and attempt resolution of the dispute.

21.4 The DRC will serve as a forum for resolution of disputes for which agreement has not been reached through informal dispute resolution. The Parties shall each designate one

1 individual and an alternate to serve on the DRC. The individuals
2 designated to serve on the DRC shall be employed at the policy
3 level (SES or equivalent) or be delegated the authority to
4 participate on the DRC for the purposes of dispute resolution under
5 this Agreement. The U.S. EPA representative on the DRC is the
6 Hazardous Waste Division Director ("Division Director") of U.S.
7 EPA's Region 10. BPA's designated member is the Lower Columbia
8 Area Manager. Ecology's designated member is the Program Manager,
9 Hazardous Waste Investigation and Cleanup, Washington Department
10 of Ecology. Written notice of any delegation of authority from a
11 Party's designated representative on the DRC shall be provided to
12 all other Parties.

13 21.5 Following elevation of a dispute to the DRC,
14 the DRC shall have twenty-one (21) days to unanimously resolve the
15 dispute and issue a written decision. If the DRC is unable to
16 unanimously resolve the dispute within this twenty-one (21) day
17 period the written statement of dispute shall be forwarded to the
18 Senior Executive Committee (SEC) for resolution, within seven (7)
19 days after the close of the twenty-one (21) day resolution period.

20 21.6 The SEC will serve as the forum for resolution
21 of disputes for which agreement has not been reached by the DRC.
22 The U.S. EPA representative on the SEC is the Regional
23 Administrator of U.S. EPA's Region 10. BPA's representative on the
24 SEC is the BPA Administrator. Ecology's representative on the SEC
25 is the Director of the Washington Department of Ecology. The SEC
26 members shall, as appropriate, confer, meet, and exert their best

1 efforts to resolve the dispute and issue a written decision. If
2 unanimous resolution of the dispute is not reached within
3 twenty-one (21) days, U.S. EPA's Regional Administrator shall issue
4 a written position on the dispute. BPA or Ecology may, within
5 fourteen (14) days of the Regional Administrator's issuance of U.S.
6 EPA's position, issue a written notice elevating the dispute to the
7 Administrator of U.S. EPA for resolution in accordance with all
8 applicable laws and procedures. In the event that BPA or Ecology
9 elect not to elevate the dispute to the Administrator within the
10 designated fourteen (14) day escalation period, BPA and/or Ecology
11 shall be deemed to have agreed with the Regional Administrator's
12 written position with respect to the dispute.

13 21.7 Upon escalation of a dispute to the
14 Administrator of U.S. EPA pursuant to Paragraph 21.6, the
15 Administrator will review and resolve the dispute within twenty-one
16 (21) days. Upon request, and prior to resolving the dispute, the
17 U.S. EPA Administrator shall meet and confer with the Secretary of
18 the U.S. DOE and a representative from Ecology to discuss the
19 issue(s) under dispute. The Administrator will provide notice to
20 all Parties of any Party's request to meet or confer with respect
21 to any such dispute and will provide an adequate opportunity for
22 all Parties to participate in any meeting or conference convened
23 to resolve such dispute. Upon resolution, the Administrator shall
24 provide BPA and Ecology with a written final decision setting forth
25 resolution of the dispute. The duties of the Administrator set
26 forth in this Part shall not be delegated.

1 21.8 The pendency of any dispute under this Part
2 shall not affect BPA's responsibility for timely performance of
3 the work required by this Agreement, except that the time period
4 for completion of work affected by such dispute shall be extended
5 for a period of time usually not to exceed the actual time taken
6 to resolve any good faith dispute in accordance with the procedures
7 specified herein. All elements of the work required by this
8 Agreement which are not affected by the dispute shall continue and
9 be completed in accordance with the applicable schedule.

10 21.9 When dispute resolution is in progress, work
11 affected by the dispute will immediately be discontinued if the
12 Division Director for U.S. EPA's Region 10 or the Ecology Program
13 Manager request, in writing, that work related to the dispute be
14 stopped because, in U.S. EPA's or Ecology's opinion, such work is
15 inadequate or defective, and such inadequacy or defect is likely
16 to yield an adverse effect on human health or the environment, or
17 is likely to have a substantial adverse effect on the remedy
18 selection or implementation process. To the extent possible,
19 U.S. EPA and Ecology shall give BPA notification that a work
20 stoppage request is forthcoming. After stoppage of work, if BPA
21 believes that the work stoppage is inappropriate or may have
22 potential significant adverse impacts, BPA may meet with the
23 U.S. EPA Division Director and Ecology equivalent to discuss the
24 work stoppage. Following this meeting, and further consideration
25 of the issues, the U.S. EPA Division Director will issue, in
26 writing, a final decision with respect to the work stoppage. The

1 final written decision of the U.S. EPA Division Director may
2 immediately be subjected to formal dispute resolution. Such
3 dispute may be brought directly to either the DRC or the SEC, at
4 the discretion of BPA or Ecology.

5 21.10 Within twenty-one (21) days of resolution of
6 a dispute pursuant to the procedures specified in this Part, BPA
7 shall incorporate the resolution and final determination into the
8 appropriate plan, schedule, or procedures and proceed to implement
9 this Agreement according to the amended plan, schedule, or
10 procedures.

11 21.11 Resolution of a dispute pursuant to this Part
12 of the Agreement constitutes a final resolution of that dispute
13 arising under this Agreement. All Parties shall abide by all terms
14 and conditions of any final resolution of dispute obtained pursuant
15 to this Part of this Agreement.

16 XXII. ENFORCEABILITY

17 22.1 The Parties agree that:

18 (a) Upon its effective date, this Agreement is
19 enforceable by any person consistent with and to the extent
20 provided by Section 310 of CERCLA, 42 U.S.C. § 9659, and a
21 violation of any standard, regulation, condition, requirement, or
22 order which has become effective and is incorporated into this
23 Agreement will be subject to civil penalties under Sections 310(c)
24 and 109 of CERCLA, 42 U.S.C. §§ 9659(c) and 9609;

25 (b) All timetables or deadlines associated with the

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1 RI/FS shall be enforceable by any person pursuant to Section 310
2 of CERCLA, 42 U.S.C. § 9659, and any violation of such timetables
3 or deadlines will be subject to civil penalties under Sections
4 310(c) and 109 of CERCLA, 42 U.S.C. §§ 9659(c) and 9609;

5 (c) All terms and conditions of this Agreement which
6 relate to interim or final remedial actions, including
7 corresponding timetables, deadlines, or schedules, and all work
8 associated with the interim or final remedial actions, shall be
9 enforceable by any person pursuant to Section 310(c) of CERCLA, 42
10 U.S.C. § 9659(c), and any violation of such terms or conditions
11 will be subject to civil penalties under Sections 310(c) and 109
12 of CERCLA, 42 U.S.C. §§ 9659(c) and 9609; and

13 (d) Any final resolution of a dispute pursuant to Part
14 XXI of this Agreement which establishes a term, condition,
15 timetable, deadline, or schedule shall be enforceable by any person
16 pursuant to Section 310(c) of CERCLA, 42 U.S.C. § 9659(c), and any
17 violation of such term, condition, timetable, deadline, or schedule
18 will be subject to civil penalties under Sections 310(c) and 109
19 of CERCLA, 42 U.S.C. §§ 9659(c) and 9609.

20 22.2 Nothing in this Agreement shall be construed
21 as authorizing any person to seek judicial review of any action or
22 work where review is barred by any provision of CERCLA, including
23 Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

24 22.3 The Parties agree that all Parties shall have
25 the right to enforce the terms of this Agreement.

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1 respect to each final assessment of a stipulated penalty against
BPA under this Agreement, each of the following:

- 3 (a) The facility responsible for the failure;
- 4 (b) A statement of the facts and circumstances giving
5 rise to the failure;
- 6 (c) A statement of any administrative or other
7 corrective action taken at the relevant facility,
8 or a statement of why such measures were determined
9 to be inappropriate;
- 10 (d) A statement of any additional action taken by or
11 at the facility to prevent recurrence of the same
12 type of failure; and
- 13 (e) The total dollar amount of the stipulated penalty
14 assessed for the particular failure.

15 23.4 Stipulated penalties assessed pursuant to this
16 Part shall be payable to the Hazardous Substances Response Trust
17 Fund.

18 23.5 In no event shall this Part give rise to a
19 stipulated penalty in excess of the amount set forth in Section
20 109 of CERCLA, 42 U.S.C. § 9609.

21 23.6 This Part shall not affect BPA's ability to
22 obtain an extension of a timetable, deadline, or schedule pursuant
23 to Part XXV of this Agreement.

24 23.7 Nothing in this Agreement shall be construed
25 to render any officer or employee of BPA personally liable for the
26 payment of any stipulated penalty assessed pursuant to this Part.

XXIV. DEADLINES

24.1 Deadlines (subject to extension pursuant to Part XXV) for the draft primary documents are established as follows:

	<u>Date</u>
a. Scope of Work	March 15, 1989
b. RI/FS Work Plan	May 15, 1990
c. Baseline Risk Assessment	September 30, 1991
d. RI Report, including the Initial Screening of Alternatives	December 30, 1991
e. FS Report	March 31, 1992
f. Record of Decision	September 30, 1992

24.2 Within twenty-one (21) days of the effective date of this Agreement, BPA shall propose target dates for completion of the draft secondary documents identified in Paragraph 20.7(a) through (h).

24.3 Within twenty-one (21) days of issuance of the Record of Decision, BPA shall propose target dates for completion of the draft secondary documents identified in Paragraph 20.7(i) through (k), and deadlines for completion of the following draft primary documents:

- (a) Remedial Design
- (b) Remedial Action Work Plan

24.4 Within fifteen (15) days of receipt of the proposed deadlines submitted pursuant to Paragraph 24.3, U.S. EPA, in conjunction with Ecology, shall review and provide comments to

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1 BPA regarding the proposed deadlines. Within fifteen (15) days
2 following receipt of the comments, BPA shall, as appropriate, make
3 revisions and reissue the proposal. The Parties shall meet as
4 necessary to discuss and finalize the proposed deadlines. If the
5 Parties agree on proposed deadlines, the finalized deadlines shall
6 be incorporated into the appropriate Work Plan(s). If the Parties
7 fail to agree within thirty (30) days on the proposed deadlines,
8 the matter shall immediately be submitted for dispute resolution
9 pursuant to Part XXI of this Agreement. The final deadlines
10 established pursuant to this paragraph shall be published by
11 U.S. EPA, in conjunction with Ecology.

12 24.5 The deadlines set forth in this Part, or to
13 be established as set forth in this Part, may be extended pursuant
14 to Part XXV of this Agreement. The Parties recognize that one
15 possible basis for extension of the deadlines for completion of the
16 RI/FS Reports is the identification of significant new conditions
17 during the performance of the RI.

18
19 XXV. EXTENSIONS

20 25.1 Either a timetable and deadline or a schedule
21 shall be extended upon receipt of a timely request for extension
22 and when good cause exists for the requested extension. Any
23 request for extension by BPA shall be submitted in writing to the
24 Project Managers and shall specify:

- 25 (a) The timetable and deadline or the schedule that is
26 sought to be extended;

- 1 (b) The length of the extension sought;
2 (c) The good cause(s) for the extension; and
3 (d) Any related timetable and deadline or schedule that
4 would be affected if the extension were granted.

5 Good cause exists for an extension when sought in regard to:

- 6 (a) An event of Force Majeure;
7 (b) A delay caused by another Party's failure to meet
8 any requirement of this Agreement;
9 (c) A delay caused by the good faith invocation of
10 dispute resolution or the initiation of judicial
11 action;
12 (d) A delay caused, or which is likely to be caused,
13 by the grant of an extension in regard to another
14 timetable and deadline or schedule; and
15 (e) Any other event or series of events mutually agreed
16 to by the Parties as constituting good cause,
17 including delays that result from compliance with
18 other federal laws.

19 25.2 Absent agreement of the Parties with respect
20 to the existence of good cause, BPA may seek and obtain a
21 determination through the dispute resolution process that good
22 cause exists.

23 25.3 Within seven (7) days of receipt of a request
24 for an extension of a timetable and deadline or a schedule,
25 U.S. EPA and Ecology shall advise BPA in writing of their
26 respective position on the request. Any failure by U.S. EPA or
27 Ecology to respond within the 7-day period shall be deemed to
28 constitute concurrence in the request for extension. If U.S. EPA
or Ecology does not concur in the requested extension, it shall
include in its statement of nonconcurrence an explanation of the

1 basis for its position.

2 25.4 If there is consensus among the Parties that
3 the requested extension is warranted, BPA shall extend the affected
4 timetable and deadline or schedule accordingly. If there is no
5 consensus among the Parties as to whether all or part of the
6 requested extension is warranted, the timetable and
7 deadline or schedule shall not be extended except in accordance
8 with determination resulting from the dispute resolution process.

9 25.5 Within seven (7) days of receipt of a
10 statement of nonconcurrence with the requested extension, BPA may
11 invoke dispute resolution.

12 25.6 A timely and good faith request for an
13 extension shall toll any assessment of stipulated penalties or
14 application for judicial enforcement of the affected timetable and
15 deadline or schedule until a decision is reached on whether the
16 requested extension will be approved. If dispute resolution is
17 invoked and the requested extension is denied, stipulated penalties
18 may be assessed and may accrue from the date of the original
19 timetable and deadline or schedule. Following the grant of an
20 extension, an assessment of stipulated penalties or an application
21 for judicial enforcement may be sought only to compel compliance
22 with the timetable and deadline or schedule as most recently
23 extended.

1 XXVI. FORCE MAJEURE

2 26.1 Force Majeure shall mean any event arising
3 from causes beyond the control of a Party that causes a delay in
4 or prevents the performance of any obligation under this Agreement,
5 including, but not limited to:

6 (a) acts of God; fire, war; insurrection; civil
7 disturbance; or explosion;

8 (b) unanticipated breakage or accident to machinery,
9 equipment, or lines of pipe despite reasonably diligent
10 maintenance;

11 (c) adverse weather conditions that could not be
12 reasonably anticipated, or unusual delay in transportation;

13 (d) restraint by court order or order of public
14 authority;

15 (e) inability to obtain, at a reasonable cost and after
16 exercise of reasonable diligence, any necessary authorizations,
17 approvals, permits, or licenses due to action or inaction of any
18 governmental agency or authority other than BPA;

19 (f) delays caused by compliance with applicable
20 statutes or regulations governing contracting, procurement, or
21 acquisition procedures, despite the exercise of reasonable
22 diligence;

23 26.2 Force Majeure shall also include any strike
24 or other labor dispute, whether or not within the control of the
25 Parties affected thereby. Force Majeure shall not include
26 increased costs or expenses of response actions, whether or not

1 anticipated at the time such response actions were initiated.

2 26.3 Any claim of Force Majeure shall be subject
3 to dispute resolution.

4
5 XXVII. FUNDING

6 27.1 BPA agrees to fund its obligations under this
7 Agreement consistent with its authority under the Bonneville
8 Project Act, the Federal Columbia River Transmission Systems Act,
9 16 U.S.C. § 838, and Pub. L. 100-371 (the 1989 Energy and Water
10 Appropriations Act).

11 27.2 In accordance with Section 120(e)(5)(B) of
12 CERCLA, 42 U.S.C. § 9620(e)(5)(B), BPA shall provide to U.S. DOE
13 for its annual report to Congress the specific cost estimates and
14 budgetary proposals associated with the implementation of this
15 Agreement.

16
17 XXVIII. RECOVERY OF EXPENSES

18 28.1 BPA and U.S. EPA agree to amend this Part
19 at a later date in accordance with any subsequent resolution of
20 the currently contested issue of cost reimbursement.

21 28.2 BPA agrees to fund and reimburse Ecology,
22 subject to the conditions and limitations set forth in this Part;
23 and subject to Section XXVII, for all reasonable costs it incurs
24 in providing services specifically related to BPA'S environmental
25 restoration activities at the Site pursuant to this Agreement.

26 28.3 Reimbursable expenses shall consist only of
27 FEDERAL FACILITY AGREEMENT
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1 actual expenditures required to be made and actually made by
2 Ecology in providing the following assistance to BPA:

3 (a) Timely technical review and substantive comment on
4 reports or studies which BPA prepares in support of its response
5 actions and submits to Ecology;

6 (b) Identification and explanation of unique state
7 requirements applicable to BPA installations in performing response
8 actions, especially state ARARs;

9 (c) Field visits to ensure cleanup activities are
10 implemented in accordance with appropriate state requirements, or
11 in accordance with agreed upon conditions between Ecology and BPA
12 that are established in the framework of this Agreement;

13 (d) Support and assistance to BPA in the conduct of
14 public participation activities in accordance with federal and
15 state requirements for public involvement; and

16 (e) Other services specified in this Agreement.

17 28.4 Within ninety (90) days after the end of each
18 quarter of the federal fiscal year, Ecology shall submit to BPA an
19 accounting of all state costs actually incurred during that quarter
20 in providing direct support services under this Part. Such
21 accounting shall be accompanied by cost summaries and be supported
22 by documentation which meets federal auditing requirements. The
23 summaries will set forth employee hours and other expenses by major
24 type of support service. All costs submitted must be for work
25 directly related to implementation of this Agreement and not
26 inconsistent with either the NCP or the requirements described in

OMB Circulars A-87 (Cost Principles for State and Local Governments) and A-128 (Audits for State and Local Cooperative Agreements with State and Local Governments) and Standard Forms 424 and 270. BPA has the right to audit cost reports used by the State to develop the cost summaries. Before the beginning of each fiscal year, the State shall supply to the BPA Project Manager a budget estimate of what it plans to do in the next year in the same level of detail as the billing documents.

28.5 Except as allowed pursuant to Paragraphs 28.6 and 28.7, within ninety (90) days of receipt of the accounting provided pursuant to Paragraph 28.4, BPA shall reimburse the State in the amount set forth in the accounting.

28.6 In the event BPA contends that any of the costs set forth in the accounting provided pursuant to Paragraph 28.4 are not properly payable, the matter shall be resolved through a bilateral dispute resolution process set forth at Paragraph 28.9.

28.7 The amount of reimbursement from BPA to Ecology shall not exceed THREE HUNDRED THOUSAND DOLLARS (\$300,000.00) during the lifetime of this Agreement, and not more than SEVENTY FIVE THOUSAND DOLLARS (\$ 75,000.00) during any single fiscal year. Either BPA or Ecology may request, on the basis of significant upward or downward revisions in the BPA estimate of its total lifetime costs through construction, a renegotiation of the above dollar amounts. Failing an agreement, either BPA or Ecology may initiate dispute resolution in accordance with Paragraph 28.9.

Circumstances could arise whereby fluctuations in BPA estimates or

1 actual final costs through the construction of the final remedial
2 action creates a situation where Ecology receives reimbursement in
3 excess of the estimated amount of these costs. Under these
4 circumstances, the State remains entitled to payment for services
5 rendered prior to the completion of a new estimate if the services
6 are within the ceiling applicable under the previous estimate.
7 This negotiated reimbursement amount reflects the judgment of BPA
8 and Ecology that support services should not be disproportionate
9 to overall project costs and budget.

10 28.8 Ecology agrees to seek reimbursement for its
11 expenses solely through the mechanisms established in this Part,
12 and reimbursement provided under this Section shall be in
13 settlement of any claims for state response costs relative to BPA's
14 environmental restoration activities at the Site.

15 28.9 Part XXI notwithstanding, this Paragraph shall
16 govern any dispute between BPA and Ecology regarding the
17 application of this Part or any matter controlled by this Part
18 including, but not limited to, allowability of expenses and limits
19 on reimbursement. While it is the intent of BPA and Ecology that
20 these procedures shall govern resolution of disputes concerning
21 Ecology reimbursement, informal dispute resolution is encouraged.

22 (a) BPA and Ecology Project Managers shall be the
23 initial points of contact for coordination of dispute resolution
24 under Paragraph 28.9.

25 (b) If BPA and Ecology Project Managers are unable to
26 resolve a dispute, the matter shall be referred to the BPA Lower

1 Columbia Area Manager, or the designated representative, and the
2 Assistant Director, Waste Management, Washington Department of
3 Ecology, as soon as practicable, but in any event within five (5)
4 working days after the dispute is elevated by the Project Managers.

5 (c) If the BPA Lower Columbia Area Manager, and the
6 Assistant Director, Waste Management, Washington Department of
7 Ecology, are unable to resolve the dispute within ten (10) working
8 days, the matter shall be elevated to the Director, Washington
9 Department of Ecology, and the BPA Administrator or the designated
10 representative.

11 (d) In the event the Director, Washington Department
12 of Ecology, and the BPA Administrator or designated representative,
13 are unable to resolve a dispute, Ecology retains any legal and
14 equitable remedies it may have to recover its expenses as well as
15 the right to withdraw from this Agreement by giving ninety (90)
16 days notice to the other Parties.

17 18 XXIX. OTHER CLAIMS

19 29.1 Nothing in this Agreement shall constitute an
20 admission, constitute or be construed as a bar or release from any
21 claim, cause of action, or demand in law or equity by or against
22 any persons, firm, partnership, or corporation not a signatory to
23 this Agreement for any liability it may have arising out of or
24 relating in any way to this Agreement or the generation, storage,
25 treatment, handling, transportation, release, or disposal of any
26 hazardous substances, hazardous wastes, hazardous constituents,

1 pollutants, or contaminants found at, taken to, or taken from BPA's
2 Ross Complex.

3 29.2 U.S. EPA and Ecology shall not be held as a
4 Party to any contract entered into by BPA to implement the
5 requirements of this Agreement.

6 29.3 BPA shall notify the appropriate federal and
7 state natural resource trustees as required by Section 104(b)(2)
8 of CERCLA, 42 U.S.C. § 9604(e), and Section 2(e)(2) of Executive
9 Order 12580. Except as provided herein, BPA is not released from
10 any liability which they may have pursuant to any provisions of
11 state and federal law, including any claim for damages for
12 liability to destruction or loss of natural resources.

13
14 XXX. OTHER APPLICABLE LAWS

15 30.1 All actions required to be taken pursuant to
16 this Agreement shall be undertaken in accordance with the
17 requirements of all applicable state and federal laws and
18 regulations unless an exemption from such requirements is provided
19 in this Agreement, CERCLA, or the NCP. The Parties acknowledge
20 that compliance with applicable laws may result in delays in
21 satisfying deadlines for submission of documents and may require
22 an extension of time pursuant to Part XXV.

23
24 XXXI. CONFIDENTIAL INFORMATION

25 31.1 BPA may assert on its own behalf, or on behalf
26 of a contractor, subcontractor, or consultant, a confidentiality

1 claim covering all or part of the information requested by this
2 Agreement pursuant to Section 104(e) of CERCLA, 42 U.S.C.
3 § 9604(e), and 32 C.F.R. Part 806. Analytical data shall not be
4 claimed as confidential by BPA. Information determined to be
5 confidential by BPA pursuant to 32 C.F.R. Part 806 shall be
6 afforded the protection specified therein and such information
7 shall be treated by Ecology as confidential, to the extent
8 permitted by state law. If Ecology is unable to afford the
9 confidentiality protection, BPA is not required to submit the data
10 to Ecology. If no claim of confidentiality accompanies the
11 information when it is submitted to either regulatory agency, the
12 information may be made available to the public without further
13 notice to BPA.
14

15 XXXII. TRANSFER OF PROPERTY

16 32.1 Conveyance of title, easement, or other
17 interest in the Site shall be in accordance with Section 120 of
18 CERCLA, 42 U.S.C. § 9620.
19

20 XXXIII. AMENDMENT OF AGREEMENT

21 33.1 This Agreement may be amended by unanimous
22 agreement of BPA, Ecology, and U.S. EPA. Any such amendment shall
23 be in writing, shall have as the effective date that date on which
24 it is signed by all the Parties, and shall be incorporated into and
25 modify this Agreement.
26

1 XXXIV. RESERVATION OF RIGHTS

2 34.1 Ecology and U.S. EPA reserve the right to
3 issue orders and/or penalties pursuant to available statutory
4 authority, or to take any other enforcement action allowable by
5 law, under the following circumstances:

6 (a) In the event or upon the discovery of a release or
7 threatened release not addressed by this Agreement
8 and which the Parties choose not to address by
9 modification of this Agreement;

10 (b) Upon Ecology's or U.S. EPA's determination that
11 action beyond the terms of this Agreement is
12 necessary to abate an emergency situation which
13 threatens the public health or the environment; or

14 (c) Upon the occurrence or discovery of a situation
15 beyond the scope of this Agreement, to which
16 Ecology or U.S. EPA would be empowered to take an
17 enforcement action and which the Parties choose
18 not to address by modification of this Agreement.

19 34.2 As of the effective date of this Agreement,
20 and during the term of this Agreement, the Parties agree that so
21 long as BPA is in full compliance with the terms of this Agreement,
22 this Agreement shall operate in lieu of any administrative action
23 by U.S. EPA or the State, civil action by the State, or civil
24 referral by U.S. EPA to the Department of Justice against BPA with
25 respect to the matters within the scope of this Agreement.

26 34.3 BPA reserves all of its rights to contest any

1 enforcement action brought under this Part.

3 XXXV. SEVERABILITY

4 35.1 If any provision of this Agreement is ruled
5 invalid, illegal, or unconstitutional, the remainder of the
6 Agreement shall not be affected by such ruling.

8 XXXVI. TERMINATION AND SATISFACTION

9 36.1 The provisions of this Agreement shall be
10 deemed satisfied upon a consensus of the Parties that BPA has
11 completed its obligations under the terms of this Agreement. Any
12 Party may propose in writing the termination of this Agreement upon
13 a showing that the requirements of this Agreement have been
14 satisfied. A Party opposing termination of this Agreement shall
15 reserve its objection upon the proposing Party within thirty (30)
16 days of receipt of the proposal. Any objection shall describe in
17 detail the additional work needed to satisfy the requirements of
18 the Agreement. Any Party may invoke dispute resolution as to the
19 request for or objection to a proposal to terminate.

21 XXVII. EFFECTIVE DATE

22 37.1 This Agreement is effective upon signature by
23 all the Parties to this Agreement.

Signature sheet for the foregoing Federal Facility Agreement for the Bonneville Power Administration's Ross Complex among the U.S. Environmental Protection Agency, the Bonneville Power Administration, and the Washington State Department of Ecology.

APR 20 1990

JAMES J. JURA
Administrator
Bonneville Power Administration

Date

REPRESENTED BY:

David Adler, Esq.
Dean Monroe, Esq.

FEDERAL FACILITY AGREEMENT
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March 1, 1990

Signature sheet for the foregoing Federal Facility Agreement for the Bonneville Power Administration's Ross Complex among the U.S. Environmental Protection Agency, the Bonneville Power Administration, and the Washington State Department of Ecology.

Christine O. Gregoire
CHRISTINE O. GREGOIRE
Director
Washington Department of Ecology
State of Washington

4/23/90

Date

Kenneth O. Eikenberry
KENNETH O. EIKENBERRY, ESQ.
Attorney General
State of Washington

4/26/90

Date

REPRESENTED BY:

Jerry A. Ackerman, Esq.

Signature sheet for the foregoing Federal Facility Agreement for the Bonneville Power Administration's Ross Complex among the U.S. Environmental Protection Agency, the Bonneville Power Administration, and the Washington State Department of Ecology.

THOMAS P. DUNNE

Acting Regional Administrator, Region 10
United States Environmental Protection Agency

May 1, 1990
Date

REPRESENTED BY:

Monica Kirk, Esq.

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FEDERAL FACILITY AGREEMENT
ROSS COMPLEX - Page 60

March 1, 1990

MEMORANDUM OF AGREEMENT

MEMORANDUM OF AGREEMENT
Between
BONNEVILLE POWER ADMINISTRATION
And
ENVIRONMENTAL PROTECTION AGENCY

Under the terms of the Toxic Substances Control Act (TSCA), Polychlorinated Biphenyl (PCB) Regulations at 40 CFR Part 761; and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 U.S.C. §§9601-9651) and applicable portions of Executive Order 12088.

1. PURPOSE.

The Bonneville Power Administration (BPA) and the Environmental Protection Agency (EPA) are entering into this agreement to clarify each agency's responsibilities and commitments for conducting actions required and authorized by the Toxic Substances Control Act (TSCA) and by the Comprehensive Environmental Response, Compensation, and Liability Act.

This agreement does not create or change any substantive or procedural rights in other parties and is intended only for Federal administrative purposes of EPA and BPA. Nothing in this agreement shall diminish any power or legal responsibility which EPA or BPA now have.

2. BACKGROUND.

BPA markets wholesale electric power from 30 Federal hydroelectric dams in the Columbia River Basin. The BPA service area includes 300,000 square miles primarily in the states of Washington, Oregon, Idaho, and Montana with small service areas in California, Nevada, Utah, and Wyoming. The BPA transmission system serves as the backbone for interconnected utilities in the Pacific Northwest and is connected with 18 other transmission systems at over 100 locations. This system consists of approximately 14,200 circuit miles of high voltage transmission lines and approximately 400 substations.

There are approximately 100 substations on the BPA system which have, or have had in the past, polychlorinated biphenyl (PCB) capacitors installed. Since BPA historically procured oil separately from its large equipment with stringent specifications, less than 3 per cent of BPA's oil filled electrical equipment tested has been measured at greater than 50 ppm PCB. Most of BPA's PCB in service is in high voltage capacitors. BPA has approximately 140,000 PCB high voltage capacitors in service, all of which are installed within fenced enclosures at electrical substations. These capacitors help to regulate voltage levels throughout the BPA transmission system. Approximately 98 percent of the total PCB's in use in the BPA system are in these capacitors. PCB capacitors in service occasionally develop leaks and, therefore, at that time, do not meet the regulatory requirement that PCB's can only be used in "a totally enclosed manner." These leaks need to be identified and proper clean-up and disposal action initiated.

PCBs are managed under BPA's Hazardous Waste Management Program. BPA presently has 32 sites where PCB and other hazardous waste are temporarily stored prior to disposal (less than 30 days). BPA has one long term PCB storage facility at the Ross complex in Vancouver, Washington.

During 1984, EPA and BPA inspected various BPA substations and found that some were not in compliance with applicable PCB regulations. In addition, BPA has queried its present and former employees regarding past burial of PCB on BPA property. As a result, sites have been identified where PCB capacitors and small transformers may have been buried. The potential and actual release of hazardous substances from these sites and potential human exposure remains to be determined.

3. ACTIONS.

a. Training

(1) BPA will continue to upgrade its Hazardous Waste Management Program (which includes TSCA) as needed and ensure that training is updated annually. Implementation of BPA's Hazardous Waste Management Program will meet the TSCA regulations for generation, transportation, and storage. Field hazardous waste collection centers will continue to be established at BPA districts systemwide and will be periodically inspected for compliance with TSCA requirements. Identified coordinators will continue to be responsible for manifesting waste from the district to the main storage facility in Vancouver, Washington.

(2) EPA will make training available to BPA personnel conducting TSCA inspections, CERCLA preliminary assessments, and site investigations.

b. Environmental Appraisals, Audits, and TSCA Inspections

(1) BPA will continue to conduct environmental appraisals and audits at its facilities to ensure that each facility is in compliance with environmental regulations, including TSCA PCB regulations. This program will include the inspection of field facilities by BPA central headquarters staff. Inspections for PCB's in service will become a part of these routine inspections.

(2) An annual plan of sites to be inspected will be submitted to EPA at the beginning of the fiscal year. Individual site inspection reports, equivalent to those done by EPA, will be prepared by BPA and submitted to EPA within 90 days after each TSCA inspection.

(3) As part of BPA's environmental appraisal program, BPA central headquarters staff will conduct the TSCA inspections for PCB in service, in storage for disposal, and actually disposed of, at BPA's facilities. These EPA equivalent TSCA inspections, under BPA's Appraisal Program, will cover all of the approximately 100 facilities where PCB electrical equipment is or has been installed. The goal will be to complete these inspections within 3 years by completing

approximately 30 inspections each year. Deviations to the PCB regulations will be identified and a compliance plan included in the inspection report.

(4) BPA will review its existing operations and maintenance standards regarding the identification of leaking PCB capacitors. Existing standards will be revised and/or new standards developed which are consistent with TSCA requirements. The goal will be to ensure that leaking PCB equipment is identified as part of the normal inspection and, furthermore, that they are promptly contained and/or removed.

c. Testing and Evaluation of BPA Facilities

(1) TSCA

(a) BPA will continue with a testing program started in 1981 to test for PCB levels in all oil-filled equipment on its system. BPA has completed tests on approximately 3,200 items to date and maintains the results in a computer data base. BPA will continue marking each piece of equipment with PCB levels as they are tested.

(b) BPA will evaluate each of the approximately 100 substations where PCB capacitors are or have been installed or stored. This evaluation will include an environmental inventory of each substation site in terms of its proximity to surface water, ground water supplies, crops, public use areas, and other environmentally sensitive areas. This environmental inventory will be completed in approximately 6 months and the purpose of this effort will be to prioritize sites for further testing and evaluation.

(c) BPA will immediately implement a testing program to determine if soils in BPA substations have been contaminated by capacitor leaks or failures. If PCB contamination is identified, additional testing will be done after consultation with EPA. This program will include the approximately 100 substations in the BPA system where PCB capacitors are in service, or have been in service in the past. This program will utilize professional technical services, and will use EPA Method 8080 as the analytical basis for testing. Thorough quality assurance provisions, including split samples and spiked samples, will be maintained throughout the program. In addition to the substations with capacitors, the program will also include tests around any piece of equipment in the BPA system which is known to have greater than 50 ppm PCB's.

(2) CERCLA

(a) Paralleling the process outlined for TSCA evaluations, BPA will implement site assessments to determine the threat or actual release of "hazardous substances" as defined in CERCLA. BPA will

prioritize these evaluations beginning with those BPA sites reported upon and documented in EPA's EIRIS listing (Ross complex, Midway, Bell substations). Subsequent evaluations will then be initiated at those BPA sites identified where hazardous substances have been or may have been disposed. In the conduct of these assessments, BPA will consider the following avenues of inquiry: applicable files and records, interviews with current and former employees, information on past practices and current operations, waste streams, use and disposal of hazardous substances, and the characteristics of the site in question. Limited soil and water sampling may also be conducted to determine if contaminants identified in CERCLA are present. The process will be conducted in consultation with EPA using priorities and guidelines established in the National Contingency Plan (NCP). BPA's goal is to complete the above evaluations in 1990.

(b) BPA will begin a testing program for those substations which have been identified as possible, or known, PCB electrical equipment burial sites. BPA will complete a critical evaluation on each of these sites and the results will be submitted to EPA for review and comment before BPA proceeds with any further remedial actions.

d. Remedial Actions

(1) BPA will develop plans for remedial actions at individual sites on a prioritized schedule based upon risk assessment that utilizes criteria and information in the NCP. BPA will provide EPA with all plans for such remedial actions. Alternative control technologies will be reviewed and matched with specific contamination problems at a given site to determine the most economical solution. EPA will, in turn, provide advice as to the effectiveness of these measures as well as the need for any further actions.

(2) When cleanup plans and schedules have been developed for identified remedial action sites, EPA will exercise oversight of the scope of the cleanup plans in accordance with CERCLA and Executive Order 12088.

4. COORDINATION AND CONSULTATION.

a. EPA and BPA will use a single point of contact for implementing this MOA and coordinating environmental compliance matters. The point of contact for EPA will be the EPA Region 10 Federal Facilities Coordinator for hazardous substances. The point of contact for BPA will be the Environmental Manager.

b. EPA will limit TSCA inspections to the verification of sites inspected by BPA. Third party complaints to EPA about BPA facilities shall be addressed when they occur in consultation with BPA's point of contact.

c. Many BPA facilities are in remote locations and the majority of them are unmanned. In order to coordinate workloads of BPA field personnel, provide access to BPA facilities, and to provide for the safety of EPA personnel during inspections, EPA will provide reasonable notice of forthcoming inspections to BPA's Environmental Manager.

d. BPA will provide EPA with all test data, appraisal reports (TSCA inspections), and environmental data (CERCLA preliminary assessments, site investigations) for those sites identified or evaluated under this agreement.

e. BPA will request sufficient funds in its budget submission to pay for BPA's response actions under this agreement. BPA will ensure that these response actions are listed in the same manner as other environmental projects under the Office of Management and Budget Circular A-105.

f. EPA and BPA points of contact will meet at least semi-annually to review progress and discuss schedules for the next 6 months.

g. All information exchanged under this agreement is subject to procedures set forth in 40 CFR Part 2 and 5 U.S.C. 552 and 552a. Information provided to EPA by BPA, if not required to be disclosed to the public by the Freedom of Information Act or other statutes, will not be released by EPA without the written consent of BPA. In any event, EPA will notify BPA prior to the release of any information referenced above.

5. COMMUNITY RELATIONS.

BPA will be responsible for providing information to state and local government, the local communities, and local media in connection with studies and response actions undertaken by BPA.

6. AMENDMENTS.

This agreement is based upon projections of resource capability. If these projections change due to unforeseen circumstances, then the provisions of this MCA may need to be renegotiated.

This agreement may be amended at any time by mutual consent of EPA and BPA. Amendments must be in writing and signed by appropriate BPA and EPA officials.

FEB 20 1985
ERNESTA B. BARNES (date)
Regional Administrator
Environmental Protection Agency
Region 10

FEB 19 1985

PETER T. JOHNSON (date)
Administrator
Bonneville Power Administration

APPENDIX F
DEFINITION OF CAUSAL FACTORS

DEFINITION OF CAUSAL FACTORS

POLICY

Evaluate if ineffective, outdated, or nonexistent policies contributed to the finding.

POLICY IMPLEMENTATION

Ascertain if written policies reflecting Federal, state, and local laws and regulations, codes, and standards were appropriately disseminated, implemented, and updated. If not, evaluate if this was a contributing factor to the finding.

RISK

Evaluate if the site personnel responsible for a situation contributing to a finding have assessed and were aware of the relative degree of risk involved in the action.

PROCEDURES

Identify if written procedures that have been prepared to effectively implement site policy, DOE Orders, and Federal, state, and local laws and regulations were a contributing factor to the finding. Determine if unfamiliarity with or unavailability of those procedures contributed to the finding.

PERSONNEL

Identify if the educational and work experience backgrounds of personnel holding responsible positions contributed to the finding. Determine if the level of personnel knowledge about the technical and safety aspects of their jobs contributed to the finding.

RESOURCES

Ascertain if the number of personnel assigned to a job was a contributing factor in the finding. Evaluate if inadequacies in facilities and equipment were a contributing factor to the finding.

TRAINING

Identify if adequate personnel training on implementing site policy, DOE Orders, and applicable Federal, state, and local laws and regulations was a contributing factor to the finding.

CHANGE

Evaluate if changes in site mission, function, operation and established requirements, which rendered existing policies or procedures inadequate or inappropriate were contributing factors to the finding. Evaluate if the timeliness and effectiveness of changes to site and DOE policy, and the implementing procedures, were a contributing factor to the finding.

APPRAISALS, AUDITS, AND REVIEWS

Determine if ineffective or insufficient appraisals, audits, and reviews, and/or inadequate followup, were contributing factors to the finding.

DESIGN

Evaluate if inadequate design of a system was a contributing factor to the finding.

HUMAN FACTORS

Ascertain if human factors, such as fatigue or deliberate circumvention of a safety system, were contributing factors to the finding.

BARRIERS AND CONTROLS

Determine if inadequacies in established barriers and controls, both administrative and physical, including operational readiness, routine inspections and preventive maintenance, and/or a lack of these controls, contributed to the finding.

SUPERVISION

Identify if ineffective supervisory controls for implementing policies, procedures, standards, laws, etc. were a contributing factor to the finding.

APPENDIX G
LIST OF ACRONYMS

List of Acronyms

BMP	best management practice
BPA	Bonneville Power Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DEQ	Department of Environmental Quality
DOE	U.S. Department of Energy
Ecology	Washington Department of Ecology
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986
ES&H	Environment, Safety and Health
ESPs	electrostatic precipitators
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FFA	Federal Facility Agreement
FS	Feasibility Study
IAG	Interagency Agreement
LDRs	land disposal restrictions
LEPC	local emergency planning committee
MOA	Memorandum of Agreement
NCP	National Oil and Hazardous Substances Pollution Contingency Plan (also known as the National Contingency Plan)
NEPA	National Environmental Policy Act
NOSN	Notice of Significant Noncompliance
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OAQ	Order of Authorization to Operate
OAR	Oregon Administrative Rule
PA	Preliminary Assessment
PCB	polychlorinated biphenyl
POTW	publicly owned treatment works
ppb	part(s) per billion
ppm	part(s) per million
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation

List of Acronyms

SARA	Superfund Amendments and Reauthorization Act of 1986
SD	storage for disposal
SDWA	Safe Drinking Water Act
SEN	Secretary of Energy Notice
SERC	state emergency response commission
SI	Site Investigation
SPCC	spill prevention, control, and countermeasure
SWAPCA	Southwest Air Pollution Control Authority
TSCA	Toxic Substances Control Act
TSD	treatment, storage and disposal
TSP	total suspended particulates
VOC	volatile organic compound
WAC	Washington Administrative Code

END

DATE FILMED

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