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ANNUAL SITE ENVIRONMENTAL REPORT

FOR CALENDAR YEAR 1997

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United States Department of Energy
Western Area Power Administration
Environment
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PREFACE

The Department of Energy Order 231.1, Chapter II.4, DOE 5400.1 and DOE 451.1 require the preparation of annual reports. In order to minimize the burden of annual reports to the DOE, Western has combined the reporting requirements found in these Orders into this Annual Site Environmental Report. These include reports required under DOE 231.1, with the Annual Summary of Environmental Permits report (DOE 5400.2A), the Annual NEPA Planning Summary (DOE 451.1) and the Annual Report on Mitigation Action Plans (DOE 451.1). Because Western has over 400 facilities located in 15 states, this report addresses the environmental activities in all the facilities as one "site."

The Western Area Power Administration (Western) has established a formal environmental protection, auditing, monitoring, and planning program that has been in effect since 1978. In March, 1996, Western established a team representing each of the four Regional Offices, the CRSP Customer Service Center and the Corporate Service Office to develop an Environmental Management System based on the guidelines in ISO 14001. The significant environmental projects and issues Western was involved with in 1997 are discussed in this annual site environmental report. It is written to show the nature and effectiveness of the environmental protection program.

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DISTRIBUTION

1.0 INTRODUCTION

The Western Area Power Administration (Western) was established on December 21, 1977, pursuant to Section 302 of Public Law 95-91, the Department of Energy Organization Act dated August 1, 1977. Western markets and transmits Federal electric power to 17 central and western states encompassing a 1.3 million-square-mile geographic area (Figure 1).

Western operates and maintains nearly 17,000 miles of transmission lines, 258 substations, and various appurtenant power facilities in its service territory. Western is also responsible for planning, constructing, operating and maintaining additional Federal transmission facilities that may be authorized in the future. Electric power marketed by Western is generated by the U.S. Bureau of Reclamation (BuRec), the U.S. Army Corps of Engineers (Corps), and the U.S. Section of the International Boundary and Water Commission (IBWC). Western markets power from 55 hydroelectric power generating plants in its service area. Additionally, Western markets the United States entitlement from the Navajo coal-fired plant near Page, Arizona. The maximum operating capability that Western currently markets is more than 10,500 megawatts (MW). In FY 1997, Western sold almost 46-billion kilowatt hours (kWh) of electricity and generated more than \$881 million in revenues to more than 600 wholesale power customers. These consist of rural cooperatives, municipalities, public utility districts, investor-owned utilities, federal and state agencies, irrigation districts, and project use customers. Wholesale power customers, in turn, provide service to millions of retail consumers in Arizona, California, Colorado, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Texas, Utah and Wyoming.

Western's organization consists of the Corporate Service Office located in Golden, Colorado; four Regional Offices located in Billings, Montana; Phoenix, Arizona; Loveland, Colorado; and Folsom, California; and the Colorado River Storage Project Customer Service Center, located in Salt Lake City, Utah. Figure 1 shows the Western marketing area and duty stations. Through its power marketing and transmission program, Western secures revenues to meet the

Western Area Power Administration **DUTY LOCATIONS**

WESTERN AREA POWER
ADMINISTRATION

annual costs of operation and maintenance of transmission facilities, purchased power, wheeling, and other expenses. Western is required to repay within allowable time periods all the power investment plus interest as well as the portion of the Government's irrigation and other non-power investments beyond the water users repayment capability.

2.0 SUMMARY

Many state and federal environmental protection laws and regulations are applicable to Western. Western facilities are within the jurisdiction of six Environmental Protection Agency (EPA) regions and 17 states. To help assure conformance with all regulatory requirements, Western is developing an Environmental Management System (EMS) based on ISO 14001, in accordance with DOE 450.1. The EMS will identify or develop the processes that define Western's activities and identify where Environment best fits into those processes to ensure environmental compliance and protection and to achieve pollution prevention goals and objectives. This is the direction Westerns senior managers have provided with an environmental policy statement. This policy fits Westerns role in the changing utility industry by directing employees to prevent, control, and abate environmental pollution at their facilities, and when possible, enhance the environment.

One of the major regulatory impacts on Western continues to be the Toxic Substances Control Act (TSCA) that regulates the use of polychlorinated biphenyls (PCB). Western's policy is to eliminate PCBs from its system wherever economically and operationally possible to reduce the potential for exposure or contamination and in so doing lessen the impact of PCB regulations on operations and the environment.

Executive Order 12856 requires Federal Agencies to comply with the Emergency Planning and Community Right-to-Know Act (EPCRA). As with other DOE elements, Western has been complying with EPCRA since before the Executive Order was issued. To summarize, in 1997, Western notified state and local emergency response entities in accordance with Section 311 and 312 of EPCRA, but was not required to prepare Planning notifications. Chemical inventories indicate

that Western does not manufacture, process or otherwise use reportable quantities of EPCRA Section 313 chemicals so Toxic Release reports were not required.

Despite a report by the National Academy of Sciences indicating no known relationship between health effects and electric and magnetic fields (EMF) of alternating current (AC) and direct current (DC) power transmission, EMF remains a concern in the decision-making process under the National Environmental Policy Act (NEPA). Western continues to monitor the research efforts underway in these areas and is a participant in a study coordinated by Bonneville Power Administration on the affects of high voltage AC fields on sheep.

Throughout 1997, Western's environmental planning process has included early public and agency involvement in proposed projects. This, along with early internal scoping of environmental issues, which follows the amended DOE Procedures for Compliance with NEPA, helps to identify significant impacts.

Western determines the appropriate level of environmental documentation through its policy of pre-scoping and public and agency participation in project development.

In July 1994, Western was delegated the authority to approve its own environmental assessments (EA) as part of its NEPA program. In 1996, two Regional Offices were given the authority to approve their own EAs. This authority has shortened the environmental process and provided for project decisions to be made closer to the project level.

Large scale projects and projects with a high potential for significant environmental impacts are analyzed within the framework of EAs and environmental impact statements (EIS). With appropriate planning and mitigation most Western projects result in minimal environmental impacts.

More comprehensive formal participation by the Advisory Council on Historic Preservation earlier in the planning process has streamlined Western's

cultural resource compliance activities. Monitoring of project implementation through public and agency feedback and field studies continues.

3.0 COMPLIANCE SELF-ASSESSMENT

3.1 COMPLIANCE STATUS

Western operates in compliance with environmental and other requirements established by federal, state, and local statutes and regulations, Executive Orders, Department of Energy Orders, and agreements with federal, state, and local regulatory agencies. The following paragraphs summarize Western's compliance status with the major environmental statutes.

3.1.1 Resource Conservation and Recovery Act (RCRA)

Since 1984, many regulations have been proposed or finalized as a result of the Hazardous and Solid Waste Amendments of 1984 (HSWA). HSWA-based regulations impact most Western facilities which are classified as conditionally exempt small quantity generators of hazardous waste. HSWA may also impact Western operations by prohibiting the land disposal of hazardous wastes and setting standards for used oil management, underground storage tanks and recycling hazardous wastes.

3.1.1.1 Underground Storage Tanks (UST)

California requires the annual renewal of permits to operate underground storage tanks. Through the monitoring and updating of permits, Western continued to comply with California underground storage tank regulations during 1997.

Western removed underground storage tanks at the Redding and Elverta maintenance facilities in California. Closure of all tanks was in accordance with state regulations.

The Rocky Mountain Region removed one UST from the Montrose, Colorado, facility and six USTs from the Cheyenne, Wyoming facility. These actions put the Rocky Mountain Region in compliance with the UST requirement deadline of December, 1998.

3.1.2 Toxic Substances Control Act (TSCA)

Western continued the removal and proper disposal and/or recycling of PCBs from facilities during 1997. Each Regional Office obtained its own PCB transportation and disposal contract with the understanding that some cross-regional collaboration will keep costs down and provide some consistency in record keeping. Waste transporters and treatment, storage and disposal facilities are audited prior to contract award. The contractor will transport and dispose of the PCBs and prepare all necessary paperwork, including certificates of destruction or disposal.

Removal and disposal of PCB equipment in Westerns Rocky Mountain Region continued in 1997 with several large scale removal and upgrade projects. The major projects included demolition of the Cody (WY) Substation, and rebuilds at Lovell and Casper Substations (also in WY), Sidney Substation (NE) and Prospect Valley Substation (CO). Low level PCB contaminated oils were burned for energy recovery at EPA permitted facilities or were chemically treated and recycled. Higher concentration PCBs were disposed of at EPA certified incinerators. Contaminated equipment carcasses were decontaminated and sold as scrap when possible. Items too heavily contaminated for recycling as scrap were disposed of at chemical waste landfills or were incinerated at permitted facilities. Over 100,000 gallons of oil with various levels of PCB contamination were removed from service. Nearly 200 tons of metals were recycled.

The Sierra Nevada Regional Office disposed of approximately 24,478 pounds of current transformers, potential transformers and capacitors. The equipment was sent to a facility for material recovery.

3.1.3 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

3.1.3.1 Superfund Amendments and Reauthorization Act (SARA)

Since SARA was passed in 1986, to amend CERCLA, twenty-three of Westerns facilities have been placed on the Federal Agency Hazardous Waste Compliance Docket (Docket). The Docket is a list of facilities under Federal control which have the potential for environmental releases which could adversely affect human health or the environment. Fourteen of the facilities listed were deleted from the Docket in 1991 because they are conditionally exempt small quantity generators. Seven of the remaining nine have been given "No Further Remedial Action Planned" (NFRAP) or "Site Evaluation Accomplished" status. The other two are still active on the Docket. Western is waiting for a response from EPA on Preliminary Assessments submitted for these facilities.

Western was proactive by implementing a Facility Evaluation Program to comply with Section 120(b) of CERCLA. The purpose of this program is to evaluate all Western facilities for sources of and suspected releases of oil, hazardous substances, pollutants, or contaminants into the environment. This process continued in 1997 with 11 facility evaluations accomplished. Western has also conducted Preliminary Assessments and Site Investigations (PA/SI) at sites which could have the potential for contamination or which Western is proposing for transfer.

3.1.3.2. Emergency Planning, Community Right-to-Know Act
(EPCRA)

Western conducts annual inventories of chemicals at its facilities throughout its service area. The information gathered is used to prepare the Section 311 and/or 312 reports to local emergency response entities. These inventories are also used to verify that Western does not manufacture, process or otherwise use threshold quantities of any of the chemicals identified in Section 313 of EPCRA. Therefore, Western does not prepare Toxic Release Inventory Reports.

3.1.4 Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

Western is required to comply with the use, storage, and disposal regulations contained in FIFRA, individual state, and some tribal government pesticide management programs. Pesticides are used by Western to control plant and animal pests, and for wood preservation.

Western's Office of Environment originally published and distributed two manuals, the "Integrated Vegetation Management Environmental Guidance Manual" and the "Pest Control Manual," during January of 1996. These two manuals are revised and updated as needed. Due to additional pesticide products on the market, changes in regulations, new information, and Regional requests to keep both manuals updated and current, the manuals were updated during 1997. Sections of both manuals have been updated with the latest information for integrated vegetation management and pest control techniques. The updated manuals will be distributed in early 1998.

Western's integrated vegetation management (IVM) program promotes the use of combined methods to control unwanted vegetation. IVM combines biological, cultural, physical, and chemical tools to

minimize economic, health, and environmental risks. IVM de-emphasizes the exclusive use of chemical control.

Methods in the manual promote the establishment of a stable, low-growing plant community on Western rights-of-way. Such a community is compatible with transmission lines, serves as an environmentally acceptable and useful ground cover, and naturally retards the re-growth of tall-growing vegetation. This minimizes the frequency of future right-of-way maintenance operations and reducing potential interruption of service. To help educate Forest Service and Bureau of Land management personnel, Western prepared a 20-minute video which explains the problems with danger trees under transmission lines on public lands. The video also advocates open dialog with these land management agencies to find solutions to environmental and safety issues related to danger tree management.

Western will continue to evaluate the use of tree growth regulators (TGRs) as a means of managing the growth of trees under transmission lines in urban settings. TGRs have been applied to deciduous trees at various locals within the service territory. Agreements will be entered into with Federal land management agencies to establish TGR test plots to determine growth regulator efficacy and cost effectiveness in controlling growth of deciduous as well as evergreen trees.

Western continued to enter into interagency agreements and county cooperative agreements to aid in the control of noxious weeds and to comply with State/County noxious weed management legislation.

3.1.5 Clean Air Act (CAA)

Several potential sources of air emissions exist at Western facilities that are regulated under the CAA. These emissions include dust during construction activities; friable asbestos during building renovation or demolition; and volatile organic

compounds emissions from gasoline dispensing facilities. Westerns construction specifications require practical methods and devices to control, prevent, and minimize emissions or discharges of air contaminants during construction activities. Particulate (dust) emissions from construction activities are prevented by periodic watering of disturbed soils on access and haul roads.

Regulatory requirements applicable to the disposal of asbestos and asbestos-containing material affect Western when activities are planned to modify or demolish existing buildings. Surveys to identify and quantify asbestos in Western facilities were initiated in 1988. The results of these surveys indicated the presence of asbestos in some buildings. Western personnel notify all appropriate regulatory agencies when planning any renovation and demolition projects that might include asbestos. In addition to the Federal regulations, State and local laws and regulations are followed to assure proper disposal of asbestos containing material.

Executive Order 12843, "Procurement Requirements and Policies for Federal Agencies for Ozone-Depleting Substances," the Environmental Protection Agency (EPA) regulations that implement section 613, "Federal Procurement," of the CAA, and an interim rule, "Federal Acquisition Regulation; Ozone Executive Order," require Federal agencies to significantly reduce use, where practicable, of ozone-depleting substances, through cost-effective procurement practices and through the substitution of safe alternative substances, and to provide leadership for their phaseout.

The phaseout of ozone-depleting substances affects Westerns operations associated with refrigeration and air conditioning, fire protection, and solvent usage. Safe alternatives are being used instead of ozone-depleting chemicals to the extent practicable. Ozone-depleting substances are recovered in air

conditioning and refrigeration systems and fire suppression systems before final disposal or dismantling of equipment. Technician certification is required for all individuals who maintain, service, repair, or dispose of appliances if such activity could reasonably be expected to release class I or class II refrigerants. Technician certification is also required for servicing motor vehicle air conditioners (MVAC) and MVAC-like appliances. Facilities have either acquired approved recovery equipment and training for technicians or contracted for such services that have EPA approval to comply with sections 608 and 609 of the CAA.

In accordance with "Guidance on the DOE Facility Phaseout of Ozone-Depleting Substances," requiring compliance with Executive Order 12843, Western identified and inventoried present and future uses of ozone-depleting substances. The Corporate Services Offices and most of the Regional Offices have phased out halon-containing hand held fire extinguishing equipment for all but a few uses. Several of the Regions have also phased out all halon-based fire suppression systems. These fire suppression systems and equipment were replaced with Carbon dioxide and dry chemical extinguishers.

3.1.6 Safe Drinking Water Act (SDWA)

3.1.6.1 Underground Injection Control (UIC)

Western continues to cooperate with EPA regions and states to obtain permission to permanently close and abandon all Class V UIC wells as they are discovered. Western is currently negotiating closure requirements for five Class V UIC wells.

3.1.6.2 Reauthorization of the SDWA

Reauthorization of the Safe Drinking Water Act (Safe Drinking Water Act Amendments of 1996) included two sections that may affect Westerns activities; (a) formalization of the requirement for Federal agencies that own or operate a facility in a wellhead protection area; conduct activities that result in underground injection; or are involved in other activities that do or threaten to contaminate water supplies must comply with all Federal, State, interstate, and local requirements related to wellhead protection, underground injection, and public water supplies; and (b) provision for funds to States for wellhead protection, critical aquifer and underground injection control programs; and grants for coordinated and comprehensive protection of groundwater resources. Emerging State programs and requirements related to those issues will need to be tracked.

3.1.7 Clean Water Act (CWA)

Negotiations continue with some states to increase action levels for non-PCB mineral insulating oils.

3.1.7.1 Spill Prevention, Control, and Countermeasures Plans (SPCC)

Western continues to evaluate facilities for the need for SPCC plans, including secondary containment, at new or existing facilities; to conduct required periodic reviews of existing SPCC plans for necessary revisions or updates; and to make recommendations to associate agencies or electric utilities who share facilities and regulatory compliance responsibilities with Western at those facilities. Approximately 58 SPCC plans were written or revised, based on new site-specific information, construction at or other

modifications to the sites, or inventories of oil-filled equipment on site.

3.1.7.2 Other Clean Water Act Issues

Western determined that an oil/water separator, owned by another agency at a site where compliance responsibilities were shared, was not effective in meeting CWA requirements, so the associate agency closed the separator for maintenance.

3.1.8 Hazardous Materials Transportation Act (HMTA)

Almost all of the hazardous and toxic material transported for Western is shipped via audited, permitted, commercial hazardous materials haulers. However, trained and qualified Western employees occasionally transport hazardous materials from one facility to another, mainly for consolidation purposes.

Hazardous materials transportation requirements for the California Department of Toxic Substances Control and North Dakota Department of Health are more extensive than those of the U.S. Department of Transportation (DOT). Therefore, the Sierra Nevada and Desert Southwest Regional Office's must have a California waste hauler's permit for the transportation of Polychlorinated Biphenyls. The Upper Great Plains Region maintains a permit for hauling all solid waste.

Western Environment staff developed a training program in 1993, which addresses the requirements of HM (Hazardous Material)-181 for the safe transportation of hazardous materials. With emphasis on Western's operations the program is updated on an annual basis. The training program is modeled after the DOE's Hazardous Material Modular Training Program which was developed in conjunction with

U.S. DOT, Research and Special Programs Administration (RSPA),
Office of Hazardous Materials Transportation.

HM-181 requires that all instructors who present the safe transportation of hazardous materials training course be re-certified every two years. Environmental compliance personnel from the Rocky Mountain Region (RMR) and Upper Great Plains Region (UGPR) are currently certified.

DOT regulates Western's transportation of hazardous materials. DOT also regulates transport of gasoline and other fuels for use in construction equipment, batteries for use in substations, battery acid, compressed gases, (especially nitrogen, sulfur hexafluoride and acetylene) and bulk quantities of dielectric oil.

3.1.9 National Historic Preservation Act (NHPA)

During 1997, Western initiated or continued previous cultural resource compliance efforts for 25 projects in 7 states. The projects included the upgrade and maintenance of substations, microwave communication facilities, electrical transmission lines, access roads and site mitigation. In accordance with Section 106 of the NHPA, as amended, Western solicited the comments of the State Historic Preservation Officer(s) in 7 states regarding these projects. In addition, Western consulted with 6 Indian tribes regarding projects in these states. This allowed Western to evaluate cultural resources within the proposed project areas and identify potential effects of the projects on significant cultural resources. Plans to mitigate potential project effects included avoiding, monitoring, testing, and excavation. Western also signed a Programmatic Agreement for routine maintenance activities in California.

3.1.10 Native American Graves Protection and Repatriation Act (NAGPRA)

NAGPRA requires consultation with Indian tribes on repatriation issues. Western had no projects on Western fee-owned lands that required NAGPRA consultations. Through the Glen Canyon Dam Project, Western is assisting in negotiations on NAGPRA concerns in the Grand Canyon.

3.2 CURRENT ISSUES

The DOE Office of Audit conducted a Line Program Environmental Management Audit in December 1991. A total of 19 findings were identified by the audit team. Seven of the 19 findings were compliance findings, in that the audit team felt that Western was not in compliance with DOE Orders. The remaining 12 were "Best Management Practice" findings. Western received the final audit report May 22, 1992, and submitted a final remedial action plan July 30. Department approval was received August 28, 1992. Table lists the activities on the remedial action items still outstanding.

TABLE 1. LIST OF OUTSTANDING REMEDIAL ACTIONS FROM THE ENVIRONMENTAL LINE MANAGEMENT AUDIT OF 1992.

FINDINGS	REMEDIAL ACTION ITEM	DATE COMPLETED
OS/BMPF-2	Prepare letter to rewrite job descriptions.	In progress
	Review existing job descriptions.	DOE lead
	Apply existing job descriptions.	DOE revising
	Apply existing performance standards.	Partially complete
	Develop environmental job descriptions as needed.	Partially complete

CA/BMPF-1	Implement a documented periodic Western-wide environmental Self-Assessment Program to provide Senior Management with information on the status of Western's environmental performance.	Drafted (will be incorporated into EMS)
SR/BMPF-2	Provide environmental awareness training to all line personnel and key managers.	Ongoing ¹
EP/CF-1	Develop Meteorological Monitoring Plan	Not done
EP/CF-2	Finalize Hazardous Waste Management Plans. Implement Hazardous Waste Management Plans. Develop Underground Storage Tank Program. Develop Underground Injection Control Program. Develop a comprehensive SPCC Program.	Partially complete In progress In progress In progress Drafted
EP/CF-3	Incorporate remedial action response training into Training Program.	Ongoing ¹
EP/BMPF-1	Develop procedure to ensure mitigation action plans are followed.°	In progress
IC/BMPF-1	Develop "lessons learned" program.	Will be part of EMS
SR/BMPF-2	Modify IDP and DTIS systems.	In progress
SR/BMPF-3	Develop Environmental Training Program. Identify personnel needing environmental training. Determine training needs. Coordinate training needs with other functional areas. Develop generic SOW for training. Incorporate environmental training into IDP and DTIS systems. Develop record keeping procedures. Procure training.	Partially complete Ongoing ¹ Ongoing ¹ Ongoing ¹ In progress Not done Ongoing ¹ Ongoing ¹

PE/CF-1	Incorporate self-assessment missing elements. Incorporate self-assessment into training.	Will be part of EMS Will be part of EMS
PE/CF-2	Supplement audit/appraisal plans, as needed. Incorporate into training program. Implement all phases of audit and appraisal program.	Drafted (Will be part of EMS) Not done (Will be part of EMS)
PE/CF-3	Establish program to collect data to track and trend. Establish program to track and trend. Provide training in tracking and trending.	Partially complete (Will be part of EMS) Partially complete (Will be part of EMS) Not done
PE-BMPF-1	Provide environmental training to maintenance personnel.	Ongoing ¹

¹Conducted/implemented by Regional Offices

3.2.1 OTHER ENVIRONMENTAL ISSUES

3.2.1.1 LEAD PAINT MANAGEMENT PROGRAM

Many of Westerns facilities were built in the 1940's, 1950's and 1960's. As such they contain lead-based paint. In 1997, Regional Offices Environment staff throughout Western have continued surveys of their facilities to determine locations of lead based paint. The paint is either managed in place or removed for disposal. Additionally, Lead Paint Management training has been obtained by many employees.

3.2.1.2 ASBESTOS MANAGEMENT PROGRAM

Several states in Westerns service area have drafted laws increasing the need for asbestos surveys in Westerns older buildings. In 1997, Westerns Regional Offices Environment staff continued asbestos surveys in all buildings. The material is removed for disposal or managed in place. Several of Westerns environmental staff are certified for asbestos management.

3.3 SUMMARY OF PERMITS

Western is required to obtain permits for underground storage tanks, PCB transportation and storage, hazardous waste storage, gasoline dispensing and underground injection wells and NPDES permits for point source and stormwater discharge. Table 1 lists the permits obtained or continued in 1997.

TABLE 2. LIST OF ENVIRONMENTAL PERMITS OBTAINED OR ONGOING DURING CALENDAR YEAR 1997.

NAME	ISSUING AGENCY	STATUS	EXPIRATION DATE
404 Permit			
Nationwide	U.S. Army Corps	Ongoing	None
General Permit 55	U.S. Army Corps	Project specific	12/31/97
Devils Lake-Lakota 115-kV Permit #96-01	U.S. Army Corps	Renewal	2/28/97
Rivers & Harbors Act			
Section 10 for Fiber Optics Project	U.S. Army Corps	Project specific	Upon project completion
Migratory Bird Treaty Act			
Take Golden eagle nest in Arizona	U.S. Fish & Wildlife Service	Ongoing	12/31/98
Take osprey nest in California	U.S. Fish & Wildlife Service	Ongoing	08/16/98 10/10/98 12/01/98
Take osprey nests in Montana	U.S. Fish & Wildlife Service	Ongoing	07/31/98
Take osprey nest in Colorado	U.S. Fish & Wildlife Service	Complete	12/31/98
Hazardous Waste			
Hauler Registration	State of CA	Renewed	Open
Variance Application	State of CA	Obtained	Open
Transporter Permit	North Dakota Department of Health	Ongoing	Annual
Permit to Operate			
Underground Storage Tanks	Shasta County	Closed	Tanks Removed
	Sacramento County	Closed	Tanks Removed
	Arizona Department of Environmental Quality	Ongoing	Annually

	Colorado State Inspector of Oil	Ongoing	Annually
Hazardous Materials Permit			
Hazardous Materials Management Plans	Alameda County	Ongoing	Annually
	Calaveras County	Ongoing	Annually
	Colusa County	Ongoing	Annually
	Contra Costa County	Ongoing	Annually
	Kern County	Ongoing	Annually
	Merced County	Ongoing	Annually
	Sacramento County	Ongoing	Annually
	San Joaquin County	Ongoing	Annually
	Santa Barbara County	Ongoing	Annually
	Santa Clara County	Ongoing	Annually
	Shasta County	Ongoing	Annually
	Tehama County	Ongoing	Annually
	Trinity County	Ongoing	Annually
Water Quality			
NPDES Permits			
Stormwater discharge Permit	State of California	Project specific	Upon project completion
Storm water Pollution Prevention Permit for Construction Project	State of Wyoming	Completed	
Clean Air Permits			
Gasoline Dispensing			
Facility Permit (CA)	Sacramento Air Pollution Control District	Ongoing	Annually

4.0 ENVIRONMENTAL PROGRAM INFORMATION

4.1 ENVIRONMENTAL PROTECTION PROGRAMS

4.1.1 Environmental Management System (EMS)

Since May, 1995, Western has been undergoing a transformation process which has resulted in numerous changes in roles and responsibilities throughout the agency. There are fewer environmental programs operated out of the Corporate Service Office and roles and responsibilities have changed in the Regional Offices as well. Late in 1995 and early 1997, Western began preparing an Environmental Management System (EMS), following the guidelines in ISO 14001. This EMS is undergoing internal review at this time and should be ready for external review by early summer, 1997. The EMS will be based on the involvement of Environment in the processes that all of Westerns functional elements use to do their business. In the meantime, Westerns environmental directives, WAPA 5400.1A and 5400.2A are still in effect.

4.1.2 Emergency Planning, Community Right-to-know Act

In 1990, the Secretary of Energy committed all elements of the Department of Energy to complying with the Emergency Planning, Community Right-to-Know Act (EPCRA), which is a part of CERCLA. Subsequently, Executive Order 12856, committed all executive agencies to comply with EPCRA. Western has completed chemical inventories throughout its sixteen-state service area to determine if we meet reporting requirements of the various sections of EPCRA. Western advises state and local emergency response entities of our chemical inventories and their locations within our facilities every year. Western does not manufacture, process or otherwise use reportable quantities of any of the extremely hazardous or hazardous materials identified in EPCRA Section 313.

4.1.2 Environmental Auditing Program

Western established an environmental auditing program in 1980.

The major purposes of the auditing program are as follows:

- discover noncompliance with applicable local, state, and Federal regulations;
- reduce environmental risks;
- improve communication with facility personnel;
- improve overall environmental performance;
- provide assistance and discuss compliance alternatives for problem areas;
- accelerate development of good environmental management practices;
- ensure worker safety when working with hazardous materials; and
- provide management with a tool for evaluating the priority of compliance issues.

The Western environmental auditing program includes auditing of Western facilities. The purpose of these audits is to advise facility and Area management of the applicability of current regulations regarding their particular operations. The audits are also conducted to review records, point out areas of non-compliance, and identify practices that are at variance with industry environmental standards. The audit results are used to provide compliance assistance to the facilities.

In 1997, 63 facilities were audited by Western Environment staff. These internal functional appraisals were undertaken in accordance

with WAPA Order 5400.2A and were frequently done in conjunction with joint safety and environmental reviews. Facilities audited included microwave site, substations, maintenance facilities, and storage yards. Audit reports contain recommended actions the facility may adopt to improve compliance with the applicable regulations. The audited facilities are required by WAPA 5400.2A to formally respond to the audit within 30 days after receiving the report, and to correct the identified problems.

Regulatory agencies, both federal, state and local, conducted audits and inspections of Westerns facilities in 1997. In California, Contra Costa County audited 4 facilities in South Bay; Alameda County audited the Tracy Substation and Maintenance Facility and the Lawrence Livermore substation; Stanislaus County audited the Mount Oso Microwave site; and Sacramento Metropolitan Air Quality Management District audited the Operations Center in Folsom. These audits were remarkable for the small number of corrections that were required of the audited facilities.

Westerns environmental staff also conducted several external audits of its contractors and vendors. The purpose of these audits was to verify the vendor/contractor compliance with federal, state and local environmental laws and regulations. The date of audit, the type of facility and its location are reported below.

<u>DATE</u>	<u>FIRM AUDITED</u>	<u>TYPE OF FIRM</u>	<u>TYPE OF AUDIT</u>
May	Hayner Used oil	Used oil recycler	Compliance
May	Tri-State (Cheyenne, WY)	Used oil recycler	Compliance
May	Tri-State (Newcastle, WY)	Used oil recycler	Compliance

May	Approved Oil (Commerce City, CO)	Used oil recycler	Compliance
May	Mesa Environmental Services (Golden, CO)	Used oil recycler	Compliance
June	Union Electric (Labadie, MO)	Used oil and low level PCB oil	Compliance
August	Bentley One Battery Systems (Commerce City, CO)	Battery recycler	Compliance
September	Safety Kleen (Englewood, CO)	Used oil and low level PCB oil	Compliance

4.1.3 Long Range Environmental Plan

In 1988, the Department of Energy committed to the preparation of a long range plan to address the Department's environmental, safety, and health concerns. Western began the preparation of its long range environmental plan in 1988 in accordance with DOE Order 5400.1. An updated draft of the plan was prepared in November of 1990 and revised again in 1994. The plan has not been revised since. In 1995 Western began its transformation process, and in 1996 assembled a team of Environmental Specialists from throughout Western to prepare the Environmental Management System, which has become a major component of the long range vision of Western's environmental function. The first draft was made available in September, 1996, and the second draft was completed in April, 1997.

4.1.4 Environmental Protection Compliance Information

In 1997, Western continued to provide crafts and management staff with information on environmental protection and compliance. Information and summaries of specific regulations, statutes, and compliance issues are covered in non-legal terms, to enhance understanding and readability. Advisories developed in CSO during 1997, as shown below, were provided as guidance on waste minimization, pollution prevention, clean air requirements and Underground storage tanks. These advisories supplement the more formal notices (sent in the form of handbooks and memoranda) that are used to inform Regional Managers and their environmental staff of regulatory requirements. Regional Environment staff also provide advisories to staff and management throughout Western regarding local and regional issues. These are sent out quarterly or monthly, depending on the region and the issues.

4.1.5 Waste Minimization

In complying with DOE Order 5400.1, WAPA Order 5400.2A, and Executive Orders 12780, 12843, 12856 and 12873, Western developed a Waste Minimization/Pollution Prevention Awareness Plan (Plan). This Plan provides guidance for development and implementation of a facility-wide, multimedia pollution prevention program within Western. Westerns goal is to eliminate or reduce the generation of waste and associated adverse environmental impacts throughout Western, with primary emphasis on source reduction. This goal includes support of DOE's commitment to the requirements of Executive Order 12856, which establishes a national goal of reducing releases of Toxic Chemical Release Inventory (TRI) toxic chemicals by 50 percent by December 31, 1999.

The specific activities necessary to meet the Plan goals include:

- 1) evaluation of Westerns facilities and operations for waste minimization/pollution prevention opportunities (pollution

prevention opportunity assessments); 2) incorporation of pollution prevention considerations into the acquisition process (including affirmative procurement of recycled materials); 3) a pollution prevention ethic and development of pollution prevention awareness in the workplace; and 4) annual reporting to DOE on status of Westerns Waste Minimization/Pollution Prevention Program, and annual evaluation of progress toward the Plan goals.

Pollution prevention is incorporated into existing training such that pollution prevention goals, projects, and ideas are discussed and emphasized as part of the training curriculum or meeting agendas. Western employees who generate or handle waste, or recycle and reuse materials, are required to report this information to their respective Waste Minimization Assessment Team members. An annual report on waste generation and waste minimization progress is then submitted to DOE each year.

As a major supplier of electric power, the work of the agency results in potentially toxic byproducts and generation of several types of wastes. Westerns construction, demolition, and replacement activities generate large quantities of waste electrical conductors, electrical equipment, and steel and scrap metal. Western reduces the amount of contaminants, wastes, and other regulated materials requiring disposal through source reduction and recycling programs. Since 1977, Western has reduced the use of polychlorinated biphenyls (PCBs) and minimized waste generation through retro-filling equipment and processing to remove PCBs and reusing the oil. Although PCBs have not been completely eliminated, Western, at present continues the removal and cleanup of PCBs as they are found and budget considerations permit. SF6 breakers have replaced oil-filled circuit breakers at several sites. The oil and metal from these replacements have been recycled.

4.1.6 Environmental Risk Assessment and Management

Environmental Risk Management tools have been designed and developed for the following uses:

- provide a formal systematic review of operations/activities to identify sources of environmental risk;
- Provide a formal risk management system (including written procedures and assigned personnel to set priorities, establish risk acceptability assessments, track performance, handle crises, and manage risk;
- provide an opportunity to review activities to assess relative impacts;
- assure that all new projects, programs or activities that may impact the agency can be reviewed to identify and address environmental risks as early as possible; and
- establish a formal project/program review and approval process which includes environmental considerations.

Two assessment methods were developed for use by Western: 1) the Qualitative Issue Characterization (QuIC); and 2) the Semi-Quantitative Evaluation (SEQUEL). The QuIC approach is used to gather and structure the basic information needed to make decision about environmental issues. The SEQUEL approach uses this information to evaluate and rank environmental risk issues and also to evaluate Westerns ability to manage that risk. SEQUEL evaluates the environmental risk by assessing an issues potential human and environmental impacts, regulatory impacts, business impacts and public perception impacts. The ability to manage risk is based on an organizationss environmental policies, human and financial resources, and its performance in the area of policy implementation. By comparing the risk score of an environmental

issue with the score gaging Westerns ability to manage risk, Western is able to identify imbalances and work toward correcting deficiencies in our environmental management system.

The environmental risk assessment and management tools were computerized to increase the ease of use of the process, simplify documentation of data, accelerate transfer of data between risk assessment team members, and produce standardized output products to report and document results. These tools should help improve Westerns ability to manage environmental risks and effectively prioritize environmental management activities.

4.2 STATE AND LOCAL ENVIRONMENTAL REQUIREMENTS

Western has facilities in 17 western and mid-western states. State and local governments apply environmental and siting controls and restrictions to Federal agencies as well as to private industry. Executive Order 12088 requires Federal agencies to comply with EPA and state and local environmental regulators.

Most of the states in Western's service area regulate the generation, transportation, treatment, storage, and disposal of hazardous and toxic materials. Community right-to-know legislation and hazardous waste clean-up laws, enacted by numerous states, are increasing control over or tracking hazardous and toxic materials. Congress has included provisions in most of its Federal environmental acts for states to become authorized to implement and manage the requirements of Federal acts. Examples of this include RCRA authorization, community right-to-know, pesticide application, and underground storage tank regulations.

Western cooperates with state and local environmental regulators and works toward compliance with applicable laws, statutes, regulations, and ordinances. Environmental audits of Western facilities address applicable state requirements in addition to those imposed by the Federal government. Additionally, Westerns field environmental staff

have developed annual chemical inventory programs to provide CERCLA Section 311 and 312 reports to local emergency response entities.

4.3 STATUS OF ENVIRONMENTAL PLANNING ACTIVITIES AND RESEARCH

In 1997, Western began formal internal scoping and continued its policy of initiating contacts with resource management and permitting agencies in the early stages of projects. The former ensures adequate and accurate purpose and need statements are incorporated in NEPA review and the latter provides an effective and efficient means of assuring the consideration of sensitive environmental issues.

Western had approximately 44 environmental planning projects either started or underway during CY96. Below are listed the EISs, EAs and CXs where Western was involved as the lead or a cooperating Federal Agency in 1997. These projects are for high voltage transmission lines, repair or replacements, substation upgrades, power marketing rate adjustments, and/or communications systems. EAs and EISs ongoing in 1997 are listed below.

Adelanto-Lugo Transmission Line Project EIS:

EIS Determination - October 26, 1992.

Participants have changed and dropped out of this project and it is on hold.

Calpine Sutter Power Plant EIS

Requested delegation of approval authority for an EIS on December 23, 1997. This EIS will be done in conjunction with the California Energy Commission and will be completed in early 1999.

Topock Transmission Line and Substation EA:

Draft EA out sent out for comment July, 1996.

Participants and the project have changed and it is on hold at this time.

Sierra Nevada Region Vegetation Management EA

EA Determination signed on October 21, 1996.

Draft EA internal review started in December, 1996.

EA on hold pending Memorandum of Understanding with the U.S. Forest Service.

In addition, Western requested authority to adopt an EIS prepared by the U.S. Bureau of Reclamation. Western was not a cooperating agency in the project but was requested to upgrade its electrical system to provide a pathway for the electrical power to operate the proposed facilities.

That project is:

Southern Nevada Water Authority Treatment and Transmission Facility EIS

The Authority to adopt the Bureau of Reclamation EIS was delegated to Western on December 31, 1996.

Project changed in February, 1997, and Westerns involvement is on hold.

Westerns Sierra Nevada Regional Office is a cooperator on the Central Valley Project Improvement Act (CVPIA) EIS, with the U.S. Fish and Wildlife Service and the U.S. Bureau of Reclamation. Western reviewed the Administrative Draft EIS and provided comments to the Interior agencies in May, 1997, regarding the documents ability to meet the requirements of NEPA and its technical adequacy as a decision document. Western was asked to provide a technical review of the Draft EIS in November, 1997 and provide comments back to Interior by early 1998.

Westerns Sierra Nevada Regional Office is also a cooperating agency on the CALFED Bay/Delta Program EIS. This is another Interior Agency/State of California environmental document. The draft EIS/EIR is expected in early 1998.

Table 3 lists the two EISs and three EAs which were completed in calendar year 1997.

TABLE 3. ENVIRONMENTAL ASSESSMENTS AND ENVIRONMENTAL IMPACT STATEMENTS COMPLETED IN CALENDAR YEAR 1997.

PROJECT NAME	CLEARANCE DATE
2004 Power Marketing EIS	4/97
Navajo Transmission Project EIS	10/97
Liberty-McCullough Fiber Optics Project EA	5/97
Ault-Craig and Hayden-Archer Transmission Line Amendment to U.S. Forest Service Operating Permit EA	8/97
Hill County Cooperative 69-kV EA	2/97

Thirty-four projects were categorically excluded from further NEPA documentation in 1997 based on Subpart D of 10 CFR 1021. These projects are listed in Table 4.

TABLE 4. ENVIRONMENTAL PLANNING PROJECTS ONGOING OR COMPLETED IN CALENDAR YEAR 1997.

PLANNING PROJECTS	CLEARANCE
CATEGORICAL EXCLUSIONS	
Oracle-Tucson 115-kV rebuild	5/97
Basic Substation 69-kV shoofly	8/97
Easement outgrant to City of Henderson, NV	7/97
Coolidge-Oracle 115-kV Pole Replacement	1/97
SLCAIP Firm Power and CRSP Transmission and Ancillary Services Rate Adjustment	8/97
Installation of Fiber Optic Line on Existing transmission lines	2/97
Shasta Substation building	4/97
COTP Rate Adjustment	4/97
Keswick Substation Construction	7/97
Spring Creek Road Repair	9/97
Killdeer Communication Site	2/97

Leeds Communication Site	2/97
Washburn Substation Stage Addition	4/97
Brinsmade Communication Site	4/97
Mallard-Minot 115-kV Transmission Line reroute	4/97
Tiber Tap Switch	6/97
Fort Peck Fiber Optics Line	6/97
Winner Substation Stage Addition	7/97
Watertown Operations Center Road Repairs	8/97
Rudyard Substations Stage Addition	11/97
Armour Substation Yard Expansion	10/97
Washburn Substation Drainage Relocation	10/97
Curecanti-Montrose 115-kV Transmission Line Access Roads	1/97
Poncha-Midway 230-kV Transmission Line Access Roads	2/97
Shiprock Substation 115-kV Interconnection	4/97
Poncha-Midway 230-kV Access Road Culvert Repairs	4/97
Curecanti-Shiprock Transmission Line Access Road Reroute	5/97
Blue Mesa-Salida Irrigation Ditch relocation	5/97
Shiprock Substation Access Road Repairs	5/97
Estes-Marys Lake 6.9-kV Distribution Line Property Transfer	8/97
Ponnequin Tap	9/97
Hayden-Gore Pass 230-kV Transmission Line Access Roads	9/97
Guernsey Wood pole replacement	10/97
Open Access Tariff at RMR	12/97

4.3.1 Future NEPA Actions

Based on two recent requests for merchant power plant generation resource integration with Western's transmission system, and further deregulation of the utility industry and the open access requirements of the Energy Policy Act of 1992, Western anticipates that we will begin three additional EIS's in the next 24 months. This projection is based on an apparent trend in the electric utility industry and not on defined projects; therefore, we do not have specific schedule or cost information.

Western will also request cooperator status for the EIS being prepared for the Platte River Cooperative Agreement. The Department of Interior, U.S. Fish & Wildlife Service and Bureau of Reclamation are the lead federal agencies.

4.3.2 Mitigation Activity

Western's list of standard mitigation measures (Appendix A) accompanies all transmission line environmental documents. This list has been developed over the years to ensure compliance with the NEPA, the Council on Environmental Quality (CEQ) guidelines, the NHPA, the Endangered Species Act and the Fish and Wildlife Coordination Act, among others. These measures are based on Western's experience with impacts associated with transmission line construction, operation, and maintenance.

No Western construction activities operated under a Mitigation Action Plan during CY97, however our work with the U.S. Bureau of Reclamation on the Liberty-McCullough Fiber Optics Project provided Western an opportunity to compare their "Environmental Commitment Plan" to DOE's "Mitigation Action Plan". The two documents are similar, however, Western requires monitoring during construction and after construction in some instances. The Environmental Commitment Plan had no reporting requirements and did not discuss post-construction monitoring.

Western continued monitoring previous mitigation actions in 1997, particularly of the Valley elderberry longhorn beetle habitat restoration in the Sacramento Operations Center compound. This is reported in Appendix B. Other mitigation activities undertaken during CY96 are listed below.

- Surveys were undertaken for the boreal toad in Colorado; black-footed ferrets in Wyoming; birds of prey, vernal pools and Valley elderberry longhorn beetles in California; birds of prey in

Wyoming, Colorado, Nebraska, New Mexico, Nevada, and Arizona; various endangered or threatened plants in Arizona, California, Nevada and New Mexico.

- Monitored reconstructed vernal pools (wetlands) in California to determine success rate. Requirements were to replace 2.92 acres. Western is currently showing approximately 3.00 acres as successful habitat.
- Surveyed transmission line crossings of wetlands in eastern North Dakota to ensure impacts of routine maintenance activities on wetlands were minimized.
- Implemented erosion control practices suggested by the Natural Resource Conservation Service at the Bellfield, ND substation. These consisted of regrading, reseeding, drainage modifications and riprapping.
- Closure of the Miles City, MT converter station evaporation ponds after tying into the city sewer system. Closure included regrading and reseeding and closure of monitoring wells.
- Relocated seven osprey nests in Montana, California and Wyoming to reduce the potential for outages on the lines and the potential for electrocution of nesting birds. Western also monitored the success of nests relocated in previous years. All relocations have been successful to date.
- Constructed a bald eagle nesting platform to replace one that had blown down near the Canyon Ferry-East Helena 100-kV transmission line.

4.3.3 Research

Western participated in at least one program dealing with environmental planning in each Regional Office. Among these is

the Colorado River Endangered Fish Species Recovery Program for both upper and lower reaches of the river. For these programs Western provides program review of the ecological studies of endangered fish that occur in the Colorado River. The Upper Great Plains Region has joined the Missouri River Basin Association. Western is also participating on two subcommittees (i.e. Terns and Plover Subcommittee and the Fish Subcommittee) of the Missouri River Natural Resource Committee which is studying several bird and fish species which occur in the Missouri River Basin and which are listed and endangered or threatened. Upper Great Plains environmental staff are assisting with the research undertaken by the Upper Missouri River/Yellowstone pallid sturgeon Workgroup. Western is participating in the CALFED Bay/Delta Ecosystem Restoration Program Plan, and has been asked to participate in the Platte River Cooperative Recovery Program. Both of these programs have goals similar to the programs listed above.

Western also has personnel serving on the Joint High Voltage Direct Current Agricultural Study Oversight Committee, Western Systems Coordinating Council Environmental Committee, the Mid-Continent Area Power Pool, American Public Power Association Environmental Committee, and the Electric Power Research Institute's Environmental Research Oversight Committees.

5.0 ENVIRONMENTAL MONITORING INFORMATION

5.1 UNPLANNED RELEASES

Several separate hazardous/toxic material spill incidents were reported. These spills were cleaned up as required by TSCA, RCRA, or the CWA, and the spills resulted in insignificant environmental damage. The locations and materials spilled are listed below:

TABLE 5. LIST OF HAZARDOUS MATERIAL SPILLS DURING CALENDAR YEAR 1997.

FACILITY	STATE	SPILLED SUBSTANCE
Raton Pass	CO	75 gallons of jet fuel
Stegall Substation	NE	15 gallons oil
Morris Substation	MN	17 gallons of non-PCB Dielectric Fluid
Bismarck Substation	ND	2 gallons non-PCB dielectric fluid
Ft. Peck Warehouse	MT	< 1 gallon of hydraulic oil
Fargo Service center	ND	5 gallons of motor oil
Bismarck Substation	ND	2 gallons of non-PCB mineral oil
Sioux Falls Substation	SD	2 gallons mineral oil
Grand Forks Substation	ND	5 gallons of non-PCB oil
Belfield Substation	ND	<1 gallon of non-PCB oil
Pierre Substation	SD	<5 gallons of non-PCB oil

6.0 GROUNDWATER MONITORING AND PROTECTION PROGRAM

6.1 GROUNDWATER MONITORING

Western is developing an integrated, risk-based groundwater protection management program for protection and management of both groundwater quality and quantity. Western's program is being developed in accordance with DOE draft groundwater protection guidelines. A groundwater monitoring plan, as required by DOE Order 5400.1, is part of the program. Groundwater protection management requirements had previously been incorporated into other programs which inherently involve groundwater protection; such as for underground storage tanks, underground injection control, and solid waste disposal. Compliance with federal, state, and local regulations is an integral part of all Western programs.

Six Western facilities were required by state and/or federal regulations to conduct groundwater monitoring to determine whether Westerns activities had degraded the quality of groundwater below its sites.

6.1.1 Phoenix Operations and Maintenance Facility

Two groundwater monitoring wells were installed at the Desert Southwest Phoenix Operations and Maintenance Facility to monitor the presence of contamination from an underground storage tank, that has been removed. Groundwater monitoring may resume to support site cleanup activities.

6.1.2 Thermopolis Substation

The groundwater monitoring wells were installed and sampled to determine presence and extent of non-PCB dielectric oil in the groundwater below the Control Building, and the results were used in determining a course of action to recommend to the State of Wyoming. The groundwater monitoring wells may be closed after the State has made a determination regarding the dielectric oil in the soil under the Control Building. The State is considering Westerns risk-based corrective action recommendation that no further remedial action is necessary.

6.1.3 Bismarck Substation

The groundwater monitoring wells were closed in accordance with requirements of the State of North Dakota.

6.1.4 Ellendale Substation

One groundwater monitoring well was installed in anticipation of future disposal of the property.

7.0 QUALITY ASSURANCE

The current quality assurance policy for Western has been established in Western Order 5700.1. It is Western's policy that, in the areas of environmental compliance, safety, and health, quality requirements shall be established consistent with DOE Orders. Western is responsible for the overall quality of compliance with relevant environmental laws and regulations. Regional Managers are responsible for the quality of activities in their own geographical areas. Due to the nature of Western's operations, an independent data verification program has not been established. Independent laboratories are used for analyzing samples taken by Western or its contractors, and the laboratories used are certified when required by federal, state or local regulations. Western uses split sampling and similar techniques to test the accuracy of data from laboratories. An independent data verification program will be established for a specific project if required by the regulatory agency involved.

A Quality Assurance Program Plan (QAPP) has been developed to outline the policies, objectives, concepts, systems, and procedures for Western as required by DOE Order 5700.6C. The QAPP has been incorporated as Chapter 2 in Western's draft Environmental Manual. The implementation of a QAPP will provide credibility for environmental projects and ensures the generation of legally defensible data.

REFERENCES

Clean Air Act
Clean Water Act
Code of Federal Regulations
Comprehensive Environmental Response Compensation and Liability Act
Department of Energy Organization Act of 1977 (Public Law 95-91)
DOE Order 224.1
DOE Order 231.1
DOE Order 451.1
DOE Order 5400.1
DOE Order 5484.1
DOE Order 5700.6C
Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.)
Emergency Planning Community Right-to-know Act
Executive Order 12088
Executive Order 12843
Executive Order 12856
Executive Order 12873
Federal Facilities Compliance Act
Federal Insecticide, Fungicide, and Rodenticide Act
Federal Water Pollution Control Act
Fish and Wildlife Coordination Act (16 U.S.C. 661-666c)
Hazardous and Solid Waste Amendments of 1984
National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347)
National Historic Preservation Act of 1966, as Amended (16 U.S.C. 470)
Native American Graves Protection and Repatriation Act (25 U.S.C. 3001)
Pollution Prevention Act
Resource Conservation and Recovery Act
Safe Drinking Water Act
Superfund Amendments and Reauthorization Act of 1986
Toxic Substances Control Act
Western Area Power Administration Order 5400.1A
Western Area Power Administration Order 5400.2A

APPENDIX A

Standard Mitigative Measures for
Construction, Operation, and Maintenance
of Transmission Lines

STANDARD MITIGATIVE PRACTICES

Mitigation

Measure

1. The contractor shall limit the movement of its crews and equipment to the right-of-way (ROW), including access routes. The contractor shall limit movement on the ROW so as to minimize damage to grazing land, crops, or property and shall avoid marring the land.
2. When weather and ground conditions permit, the contractor shall obliterate all contractor-caused deep ruts that are hazardous to farming operations and to movement of equipment. Such ruts shall be leveled, filled, and graded, or otherwise eliminated in an approved manner. In hay meadows, alfalfa fields, pastures, and cultivated productive lands, ruts, scars, and compacted soils shall have the soil loosened and leveled by scarifying, harrowing, disking, or other approved methods. Damage to ditches, tile drains, terraces, roads, and other features of the land shall be corrected. Before final acceptance of the work in these agricultural areas, all ruts shall be obliterated, and all trails and areas that are hard-packed as a result of contractor operations shall be loosened, leveled, and reseeded. The land and facilities shall be restored as nearly as practicable to their original conditions.
3. Water bars or small terraces shall be constructed across all ROW and access roads on hillsides to prevent water erosion and to facilitate natural revegetation.
4. The contractor shall comply with all federal, state, and local environmental laws, orders, and regulations. Prior to construction, all supervisory construction personnel and heavy equipment operators will be instructed on the protection of cultural and ecological resources.
5. The contractor shall exercise care to preserve the natural landscape and shall conduct its construction operations so as to prevent any unnecessary destruction, scarring, or defacing of the natural surroundings in the vicinity of the work. Except where clearing is required for permanent works, approved construction roads, or excavation operations, all trees, native shrubbery, and vegetation shall be preserved and shall be protected from damage by the contractor's construction operations and equipment. The edges of clearings and cuts through tree, shrubbery or other vegetation shall be irregularly shaped to soften the undesirable visual impact of straight lines. Where such clearing occurs in the Lake Mead National Recreation Area, the contractor shall consult with the on-site Park representative.
6. On completion of the work, all work areas except access roads shall be scarified or left in a condition which will facilitate natural revegetation, provide for proper drainage, and prevent erosion. All destruction, scarring, damage, or defacing of the landscape resulting from the contractor's operations shall be repaired by the contractor.

7. Construction staging areas shall be located and arranged in a manner to preserve trees and vegetation to the maximum practicable extent. On abandonment, all storage and construction buildings, including concrete footings and slabs, and all construction materials and debris shall be removed from the site. The area shall be regraded as required so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion.
8. Borrow pits shall be excavated so that water will not collect and stand therein. Before being abandoned, the sides of borrow pits shall be brought to stable slopes, with slope intersections shaped to carry the natural contour of adjacent undisturbed terrain into the pit or borrow area giving a natural appearance. Waste piles shall be shaped to provide a natural appearance.
9. Construction activities shall be performed by methods that will prevent entrance, or accidental spillage, of solid matter contaminants, debris, any other objectionable pollutants and wastes into streams, flowing or dry watercourses, lakes, and underground water sources. Such pollutants and waste include, but are not restricted to refuse, garbage, cement, concrete, sanitary waste, industrial waste, radioactive substances, oil and other petroleum products, aggregate processing tailing, mineral salts, and thermal pollution.
10. Dewatering work for structure foundations or earthwork operations adjacent to, or encroaching on, streams or watercourses shall be conducted in a manner to prevent muddy water and eroded materials from entering the streams or watercourses by construction of intercepting ditches, bypass channels, barriers, settling ponds, or by other approved means.
11. Excavated material or other construction materials shall not be stockpiled or deposited near or on stream banks, lake shorelines, or other watercourse perimeters where they can be wasted away by high water or storm runoff or can in any way encroach upon the actual watercourse itself.
12. Waste waters from concrete batching, or other construction operations shall not enter streams, watercourses, or other surface waters without the use of such turbidity control methods as settling ponds, gravel-filter entrapment dikes, approved flocculating processes that are not harmful to fish, recirculation systems for washing of aggregates, or other approved methods. Any such waste waters discharged into surface waters shall be essentially free of settleable material. For the purpose of these specifications, settleable material as defined as that material which will settle from the water by gravity during a 1-hour quiescent detention period.
13. The contractor shall utilize such practicable methods and devices as are reasonably available to control, present, and otherwise minimize atmospheric emissions or discharges of air contaminants.

14. The emission of dust into the atmosphere will not be permitted during the manufacture, handling, and storage of concrete aggregate, and the contractor shall use such methods and equipment as necessary for the collection and disposal, or prevention, of dust during these operations. The contractor's methods of storing and handling cement and pozzolans shall also include means of eliminating atmospheric discharges of dust.
15. Equipment and vehicles that show excessive emissions of exhaust gases due to poor engine adjustments, or other inefficient operating conditions, shall not be operated until repairs or adjustments are made.
16. The contractor shall prevent any nuisance to persons or damage to crops, cultivated fields, and dwellings from dust originating from his operations. Oil and other petroleum derivatives shall not be used for dust control. Speed limits shall be enforced, based on road conditions, to reduce dust problems.
17. To avoid nuisance conditions due to construction noise, all internal combustion engines used in connection with construction activity shall be fitted with an approved muffler and spark arrester.
18. Burning or burying waste materials on the ROW or at the construction site will be permitted if allowed by local regulations. The contractor shall remove all other waste materials from the construction area. All materials resulting from the contractor's clearing operations shall be removed from the ROW.
19. The contractor shall make all necessary provisions in conformance with safety requirements for maintaining the flow of public traffic and shall conduct its construction operations to offer the least possible obstruction and inconvenience to public traffic.
20. Western will apply necessary mitigation to eliminate problems of induced currents and voltages onto conductive objects sharing a ROW, to the mutual satisfaction to the parties involved.
21. Structures will be carefully located to avoid sensitive vegetative conditions, including wetlands, where practical.
22. ROW will be located to avoid sensitive vegetation conditions including wetlands where practical, or, if they are linear, to cross them at the least sensitive feasible point.
23. Removal of vegetation will be minimized to avoid creating a swath along the ROW.
24. Topsoil will be removed, stockpiled, and respread at all heavily disturbed areas not needed for maintenance access.
25. All disturbed areas not needed for maintenance access will be reseeded using mixes approved by the landowner or land management agency.

26. Erosion control measures will be implemented on disturbed areas, including areas that must be used for maintenance operations (access ways and areas around structures).
27. The minimum area will be used for access ways (12 feet to 15 feet wide, except where roadless construction is used).
28. Structures will be located and designed to conform with the terrain. Leveling and benching of the structure sites will be the minimum necessary to allow structure assembly and erection.
29. ROW will be located to utilize the least steep terrain and, therefore, to disturb the smallest area feasible.
30. Careful structure location will ensure spanning of narrow flood prone areas.
31. Structures will not be sited on any potentially active faults.
32. Structure sites and other disturbed areas will be located at least 300 feet, where practical, from rivers, streams (including ephemeral streams), ponds, lakes, and reservoirs.
33. New access ways will be located at least 300 feet, where practical, from rivers, ponds, lakes, and reservoirs.
34. At crossings of perennial streams by new access ways, culverts of adequate size to accommodate the estimated peak flow of the stream will be installed. Construction areas will minimize disturbance of the stream banks and beds during construction. The mitigation measures listed for soil/vegetation resources will be performed on areas disturbed during culvert construction.
35. If the banks of ephemeral stream crossings are sufficiently high and steep that breaking them down for a crossing would cause excessive disturbance, culverts will be installed using the same measures as for culverts on perennial streams.
36. Blasting will not be allowed.
37. Power line structures will be located, where practical, to span small occurrences of sensitive land uses, such as cultivated areas. Where practicable, construction access ways will be located to avoid sensitive conditions.
38. ROW will be purchased at fair market value and payment will be made of full value for crop damages or other property damage during construction or maintenance.
39. The Power line will be designed to minimize noise and other effects from energized conductors.
40. The precise location of all structure sites, ROW, and other disturbed areas will be determined in cooperation with landowners or land management agencies.

41. Crossing of operating railroads by construction vehicles or equipment in a manner that would cause delays to railroad operations will be avoided. Construction will be coordinated with railroad operators. Conductors and overhead wire string operations would use guard structures to eliminate delays.
42. Before construction, Western will perform a Class III (100 percent of surface) cultural survey on all areas to be disturbed, including structure sites and new access ways. These surveys will be coordinated with the appropriate land owner or land management agency. A product of the survey will be a Cultural Resources Report recording findings and suggesting mitigation measures. These findings will be reviewed with the State Historic Preservation Offices and other appropriate agencies, and specific mitigation measures necessary for each site or resource will be determined. Mitigation may include careful relocation of access ways, structure sites, and other disturbed areas to avoid cultural sites that should not be disturbed, or data recovery.
43. The contractor will be informed of the need to cease work in the location if cultural resource items are discovered.
44. Construction activities will be monitored or sites flagged to prevent inadvertent destruction of any cultural resource for which the agreed mitigation was avoidance.
45. Construction crews will be monitored to the extent possible to prevent vandalism or unauthorized removal or disturbance of cultural artifacts or materials from sites where the agreed mitigation was avoidance.
46. Should any cultural resources that were not discovered during the Class III Survey be encountered during construction, ground disturbance activities at that location will be suspended until the provisions of the National Historic Preservation Act and enabling legislation have been carried out.
47. Construction activities will be monitored or significant locations flagged to prevent inadvertent destruction of any paleontological resource for which the agreed mitigation was avoidance.
48. Clearing for the access road will be limited to only those trees necessary to permit the passage of equipment.
49. The access road will follow the lay of the land rather than a straight line along the ROW where steep features would result in a higher disturbance.

APPENDIX B

REPORT ON THE
MITIGATION ACTION PLAN
FOR THE
SACRAMENTO OPERATIONS CENTER

REPORT ON THE
MITIGATION ACTION PLAN
FOR THE
SACRAMENTO OPERATIONS CENTER

The Sacramento Area Office constructed an operations center (SOC) in Folsom, California to eliminate overcrowding at its existing Sacramento facilities and improve operation efficiency. Habitat for one federally listed threatened species, the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), was identified at the project site. Of the two shrubs identified, one would be affected by the proposed action. Mitigation and compensation measures were subsequently established.

Mitigation and compensation measures implemented at the SOC:

- Location of a mitigation area was identified in the northernmost portion of the property.
- The relocation of the one elderberry shrub occurred on November 13, 1992, and followed the guidelines specified by the U.S. Fish and Wildlife Service. [To increase the likelihood of plant survival, transplanting and replacement planting was conducted during the winter months (November through March) when the shrub was dormant.]
- Protective construction fencing was installed around the second elderberry shrub on the site.
- Habitat compensation planting occurred on March 11, 1993. The replacement planting ratio used to mitigate the transplanted elderberry shrub was 5:1. Transplanting efforts followed the recommended guidelines specified by the U.S. Fish and Wildlife Service and included 20 elderberry seedlings, 8 oak saplings, a bubbler irrigation system and protective chain-link fencing.
- Meeting with USFWS to review possible impacts to 10-acre site on October 19, 1993.
- Transmitted letter to USFWS to apprise them of results of the mitigation and monitoring effort on October 26, 1993.
- A couple of bushes were replaced prior to end of construction and the irrigation system repaired after tampering by a vagrant was discovered.
- Task order prepared for contractor to monitor mitigation area for first three years until buildings are occupied and Western personnel on hand.
- ▶ Surveys conducted in 1994 indicated that only two of the 20 elderberry plants had not survived. All oak saplings were surviving.
- ▶ Surveys conducted in 1995 indicated that all of the remaining 18 elderberry plants had survived. All oak saplings were surviving.
- ▶ Surveys conducted in 1996 indicated that four of the oak saplings have died and need to be replaced, and three of the elderberry stems have died and

need to be replaced. The losses were attributed to the irrigation system. Repairs to system preceded replacement of any plant material. Overall the mitigation appears to be meeting the goals of the plan.

The irrigation system was repaired and weeding was done to limit stress on the plants. Oak and elderberry seedlings were replanted in November, 1996.

Surveys in 1997 indicate that the goals of the mitigation plan are being met at this time. Based on previous reports, there is currently a 90 percent success rate of elderberry bushes and a 100 percent success rate of live oaks. The mitigation plantings appear stable and continued monitoring is recommended for the replacement live oak plantings until they become successfully established. No indications of beetle usage have been identified.

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