



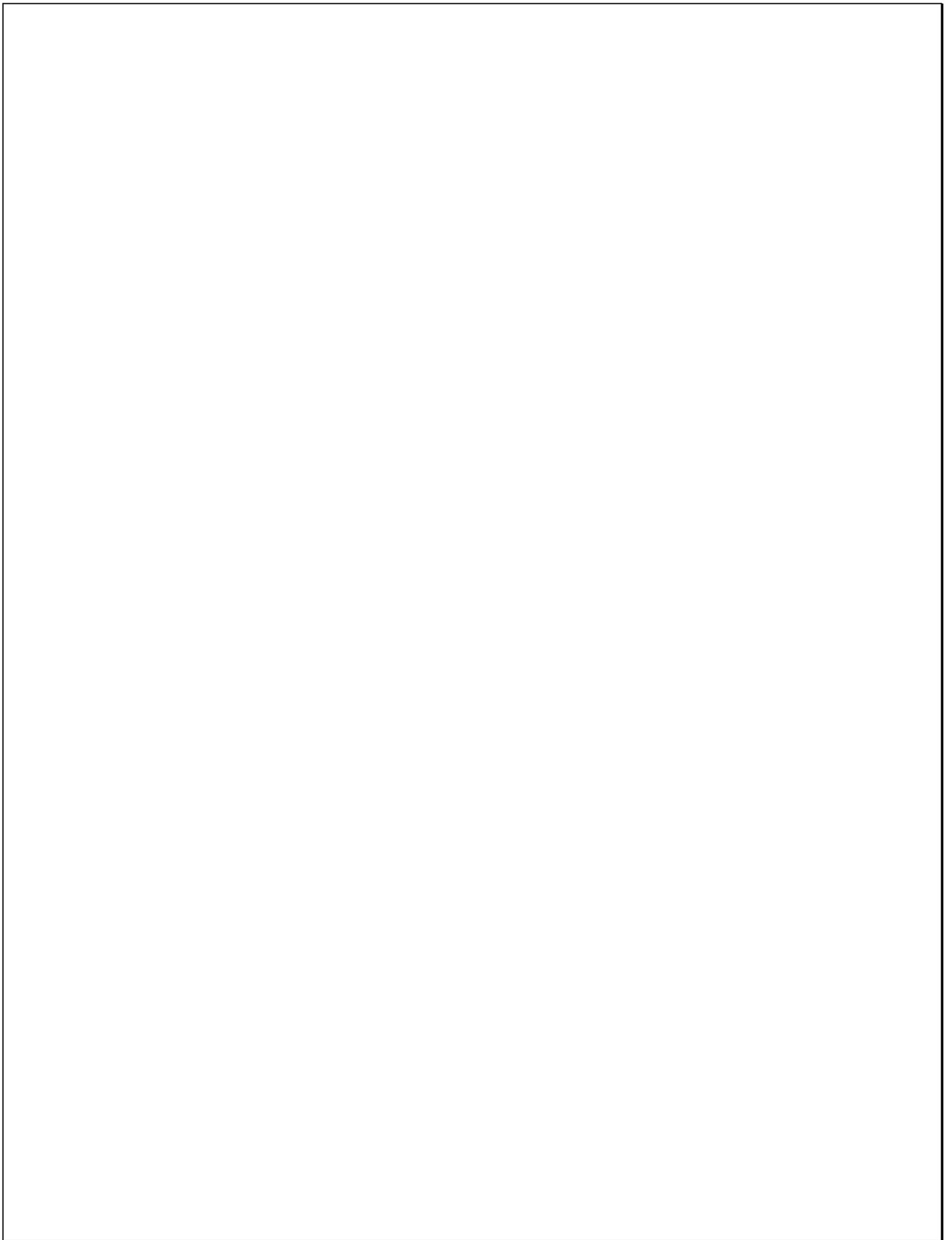
**2016 ANNUAL SITE ENVIRONMENTAL
REPORT
SOUTHWESTERN POWER ADMINISTRATION**

United States Department of Energy

Southwestern Power Administration

One West Third Street

Tulsa, Oklahoma 74103



CONTENTS

Executive Summary.....	1
Introduction	1
Compliance Summary	3
Environmental Restoration and Waste Management.....	3
Comprehensive Environmental Response, Compensation, & Liability Act	3
Emergency Planning and Community Right to Know & Superfund Amendments & Reauthorization Act	4
Resource Conservation and Recovery Act.....	4
Federal Facilities Compliance Act	5
National Environmental Policy Act.....	5
Toxic Substances Control Act	6
Federal Insecticide, Fungicide, and Rodenticide Act	7
Air Quality and Protection	7
Clean Air Act.....	7
Water Quality and Protection.....	10
Clean Water Act.....	10
National Pollutant Discharge Elimination System	10
Safe Drinking Water Act	11
Oil Pollution Act	11
Other Environmental Statutes	12
Endangered Species Act	12
National Historic Preservation Act.....	13
Migratory Bird Treaty Act.....	14
Sustainability	15
Floodplain Management and Wetland Management.....	15
Pollinator Initiatives.....	15
Climate Change	16
Summary of Environmental Permits & IDs	16
Gore, Oklahoma, Maintenance Unit Geographical Area	16
Springfield, Missouri, Maintenance Unit Geographical Area	16
Jonesboro, Arkansas, Maintenance Unit Geographical Area.....	16
Environmental Management System.....	17
Environmental Program Contacts.....	18

EXECUTIVE SUMMARY

Southwestern Power Administration's (Southwestern) Annual Site Environmental Report (ASER) serves as the chief reporting mechanism for site environmental performance information within the Department of Energy (DOE), and as a valuable resource for shared and collaborative environmental protection and performance information to Southwestern stakeholders and members of the public living near Southwestern facilities and transmission line rights-of-way (ROW). This ASER meets the requirements of DOE Order 231.B and was prepared in general accordance with the March 2017 guidance titled *Guidance for Preparation of the 2016 Department of Energy Annual Site Environmental Reports*. Southwestern is committed to environmental protection, compliance, and sustainability, and has made sincere efforts to ensure that the validity and accuracy of the reported data is correct. Southwestern's key environmental involvement includes an emphasis on the protection of ecological resources, which is effectively accomplished through environmental program elements such as protecting water resources, transmission of clean hydropower energy, oil spill prevention practices, reduction of greenhouse gas emissions, and comprehensive project reviews to ensure the protection of living organisms, migratory birds, Federally threatened or endangered species, and historic properties. Southwestern continues to strive to minimize effects to natural resources and for continual improvement in the area of environmental compliance and sustainability, all while carefully balancing Southwestern's mission to market and reliably deliver Federal hydroelectric power to its end-use preference customers.

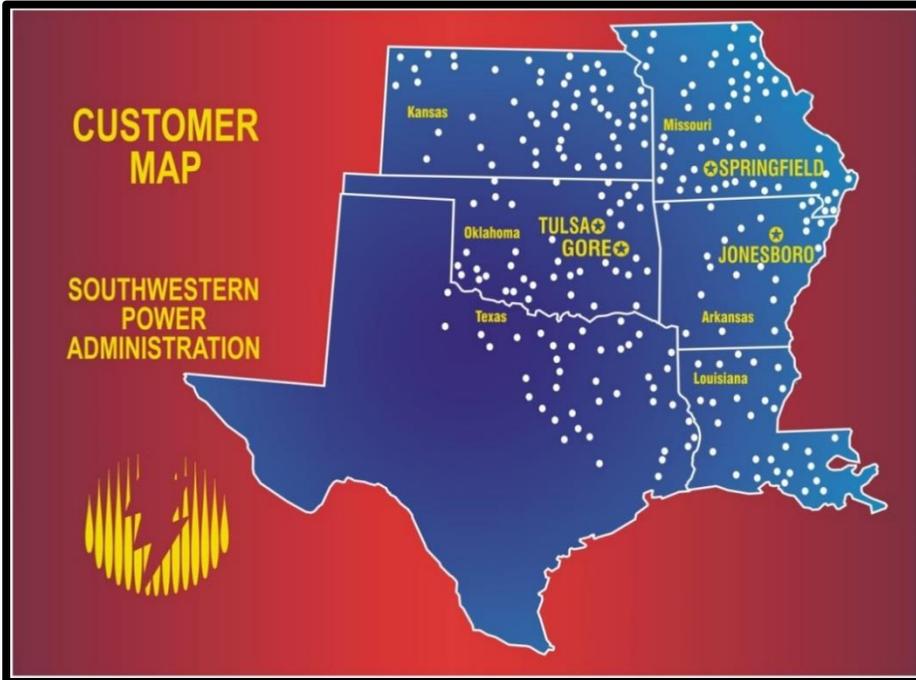
INTRODUCTION

Southwestern was established in 1943 by the Secretary of the Interior as a Federal Agency that today operates within the DOE as authorized by Section 5 of the Flood Control Act of 1944. As one of four Power Marketing Administrations in the United States, Southwestern markets hydroelectric power in Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and Texas from 24 U.S. Army Corps of Engineers (USACE) multipurpose dams, with a generating capacity of approximately 2,181 megawatts, which include: Beaver Dam, Blakely Mountain Dam, Broken Bow Dam, Bull Shoals Dam, Clarence Cannon Dam, Dardanelle Lock and Dam, DeGray Dam, Denison Dam, Eufaula Dam, Fort Gibson Dam, Greers Ferry Dam, Harry S. Truman Dam, Keystone Dam, Narrows Dam, Norfolk Dam, Ozark Lock and Dam, Robert D. Willis Hydropower Project at Town Bluff Dam, Robert S. Kerr Lock and Dam, Sam Rayburn Dam, Stockton Dam, Table Rock Dam, Tenkiller Ferry Dam, Webbers Falls Lock and Dam, and Whitney Dam.

Southwestern's mission is to market and reliably deliver Federal hydroelectric power with preference to public bodies and cooperatives. This is accomplished by maximizing the use of Federal assets to repay the Federal investment, and participating with other water resource users in an effort to balance their diverse interests with power needs, within broad parameters set by the USACE, and implementing public policy.

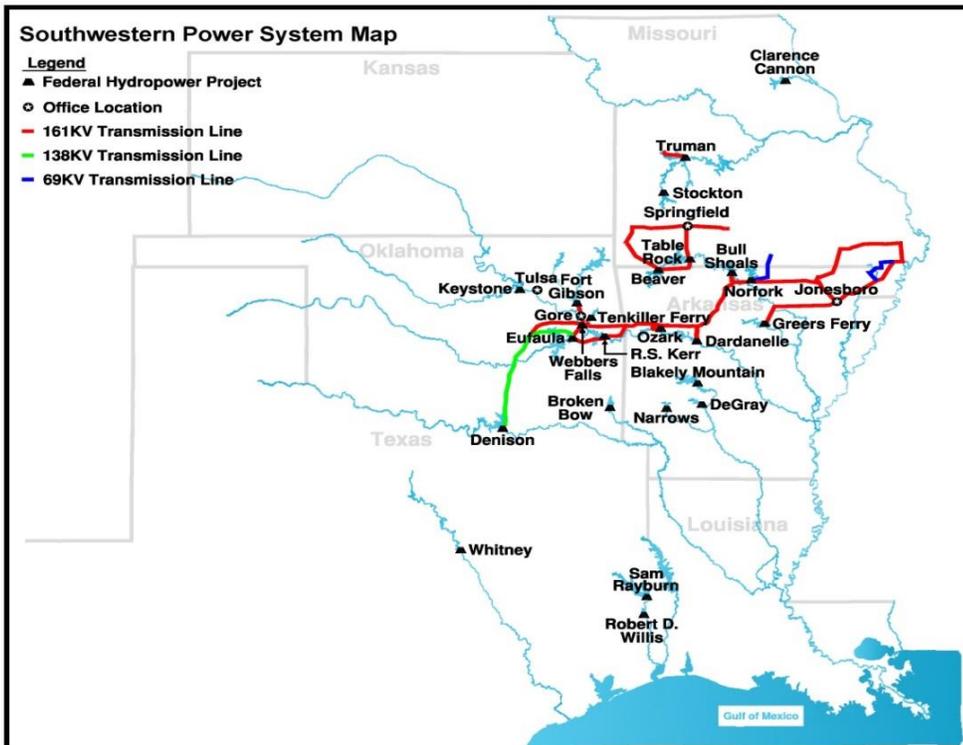
By law, Southwestern markets and delivers power primarily to public bodies and rural electric cooperatives. Southwestern has over one hundred such "preference" customers, and these entities ultimately serve over eight-million end-use customers throughout Kansas, Missouri, Oklahoma, Arkansas, Louisiana, and Texas, as shown in *Figure 1*.

Figure 1. Southwestern Power Administration Service Territories and Regions



As shown in Figure 2 below, Southwestern operates and maintains 1,380 miles of high-voltage transmission lines, substations and switchyards, and a communications system that includes microwave, VHF radio, and fiber optics. Offices are located in Gore, Oklahoma; Jonesboro, Arkansas; Springfield, Missouri; and Tulsa, Oklahoma.

Figure 2. Southwestern Power System Map



Around-the-clock power scheduling and dispatching are conducted by staff in the Springfield Operations Center. Southwestern is managed from its agency headquarters office in Tulsa, Oklahoma, and employs a total of 217 full-time Federal and contract employees.

In Fiscal Year (FY) 2016, Southwestern marketed and delivered approximately 6.5 billion kilowatt hours of hydropower from the 24 Federal hydroelectric projects in its marketing region. The agency's annual revenue of \$211 million was used to pay the cost of operating and maintaining the generation and transmission facilities, and to repay principal and interest on the Federal investment.

In FY 2016, Southwestern's hydropower generated enough renewable energy to save the Nation the fossil fuel equivalent of an estimated 3.5 million tons of coal, 52.2 billion cubic feet of gas, or 11.3 million barrels of fuel oil, and prevented the emission of greenhouse gases equivalent to 5.4 million tons of carbon dioxide.

Southwestern's environmental responsibility goes beyond renewable energy. Southwestern works with Federal, state, and local agencies to ensure that concerns about water quality and quantity are adequately addressed, and coordinates with other public and private entities to minimize hydropower impacts to fish and bird populations, and their habitats.

Southwestern's facilities generate small amounts of hazardous and non-hazardous industrial waste as a secondary effect to utilizing electrical equipment, maintaining maintenance facilities, and performing radio tower communication maintenance and system upgrades. In addition, small amounts of universal waste, polychlorinated biphenyl (PCB) contaminated oil-filled electrical equipment, used petroleum oils, and greenhouse gases are generated as byproducts of Southwestern's operations. Within Southwestern's facilities, the primary potential pollutants that could affect water, soil, and air resources include unplanned releases of dielectric insulating oil (PCB and non-PCB contaminated), sulfur-hexafluoride gas circuit breaker insulating gas, and herbicides used for vegetation management control along ROW. Standard operating procedures, controls and diligent processes are in place and monitored regularly, for successful implementation of pollution prevention controls. To ensure strict quality assurance standards are met, Southwestern utilizes only National Environmental Laboratory Accreditation Program (NELAP) certified laboratories, which utilize quality control standards and policies using Environmental Protection Agency (EPA) standard test methods. Adherence to these methods helps to ensure that the results of any laboratory tests are both accurate and legally defensible.

COMPLIANCE SUMMARY

This section summarizes Southwestern's Calendar Year 2016 compliance results for the significant environmental statutes and regulations, DOE internal environmental and sustainability orders, and summarizes any environmental violations or reportable environmental occurrences, and provides a listing of active environmental related permits.

ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, & LIABILITY ACT (CERCLA)

This Act, referred to as Superfund, was designed to help develop an inventory of hazardous disposal sites, reporting of accidental hazardous substance releases, establish liability and protocol for the cleanup of hazardous substance releases, and promote planning by Federal and state agencies to cleanup hazardous disposal or spill sites, and cleanup of inactive hazardous waste sites. CERCLA provided authorization for EPA to respond to and remedy polluted sites. Southwestern continued to have no ongoing CERCLA hazardous waste cleanup facility involvement during 2016. In addition, there are no Southwestern facilities listed on the Federal Agency Hazardous Waste Compliance Docket, or Non-National Priorities List. To deter involvement as a CERCLA potentially responsible party (PRP) and to mitigate potential site contamination, Southwestern contracts with only

properly permitted equipment disposal facilities for the disposal of PCB contaminated equipment, used oil, electrical equipment carcasses, universal waste, hazardous waste, and other environmentally sensitive materials which may have hazardous constituents. Prior to waste removal and disposal, Southwestern, through due diligence audits, periodically evaluates the disposal facility to ensure it is in full compliance with environmental disposal regulations. Southwestern regularly conducts facility disposal due diligence audits of facilities which receive hazardous or Toxic Substances Control Act waste from Southwestern's facilities. Under 40 Code of Federal Regulations (CFR) 302.6(a), and as a requirement of CERCLA, a release of a CERCLA hazardous substance in excess of the reportable quantity in a 24-hour time period, must be reported to the National Response Center. No incidence of releases equal to or in excess of the reportable quantity occurred in 2016 at any Southwestern facility.

In addition to facility disposal due diligence audits to avert potential PRP responsibility, Southwestern also conducts Phase I Environmental Site Assessments according to the All Appropriate Inquiry standards before performing acquisitions. These audits help to ensure that there is no evidence of past releases or contamination from past or present uses of the property, mitigate environmental risks and liabilities, and provide protection from CERCLA landowner liability under the innocent landowner defense. Southwestern conducted one such evaluation on a 0.22-acre parcel of proposed easement located in Okfuskee County, Oklahoma; there were no *recognized environmental conditions* (RECs) associated with the examination and analysis of the property.

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW (EPCRA) AND SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA)

EPCRA encourages and supports emergency planning efforts at the state and local levels. Additionally, it provides public and local governments with information concerning potential chemical hazards present in their communities, by requiring facilities to disclose hazardous substances they use or store. As in years past, Southwestern did not surpass the regulatory threshold trigger quantities, on an individual facility basis, for the Tier I and/or II reporting and notification requirements, and does not expect it will have to do so unless significant changes in operational design or the change in technology dictates the implementation of new hazardous substances, in large quantities, within the Agency. This Act revised and extended CERCLA. The SARA Title III amendments, under 40 CFR 355, Subpart C, dictate that reportable quantity releases of SARA extremely hazardous substances or CERCLA hazardous substances must be reported immediately to the local planning committee, and the state emergency response planning commission. No such releases or notifications on behalf of the Agency were required during 2016.

In addition to other reporting requirements, EPCRA Subpart 313 requires facilities to complete and submit a Toxic Chemical Release Inventory form report, called a Form R, for toxic chemicals that were manufactured, processed, or otherwise used in quantities that exceed the toxic chemical threshold for the calendar year. Executive Order 13148, Part 5, also requires all Federal agencies to comply with the provisions of Subpart 313; however, Southwestern did not manufacture, process, or otherwise use any chemicals that exceeded the toxic chemical threshold, for any facility, during the 2016 Calendar Year, and therefore was not subject to the reporting requirements.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

The RCRA governs the management of hazardous wastes. There is not a single comprehensive list of hazardous waste that is continuously updated, as hazardous waste identification is a process that involves many steps. To be considered a hazardous waste, a material first must be classified as a solid waste per 40 CFR Part 261.2. The EPA defines solid waste as garbage, refuse, sludge, or other discarded material (including solids, semisolids, liquids, and contained gaseous materials). If a waste is considered solid waste, it must then be determined if it is a hazardous waste. Wastes are defined as hazardous, by EPA, if they are specifically named on one of four hazardous waste lists, or if they exhibit one of four characteristics.

Southwestern maintains an Environmental Protection Program which functions in conjunction with the Environmental Management System (EMS) to help ensure compliance with RCRA regulations. These programs were established and implemented to minimize the volume and toxicity of wastes; monitor the collection, transportation, processing and disposal of solid wastes; encourage recycling; assure the safety, health, and welfare of the public; and prevent pollution of the air, land, and water. Southwestern continues to improve its identification, characterization, quantification, and reporting of RCRA waste streams. The majority of Southwestern's Hazardous wastes are classified and managed as Universal Wastes. There were no Notices of Violation or fines regarding RCRA or Universal Wastes issued during 2016.

FEDERAL FACILITIES COMPLIANCE ACT (FFCA)

The FFCA is the primary mechanism EPA uses to address violations at Federal facilities for statutes under which EPA does not have penalty or order authority. The particular violation(s) at issue determines the specific type, scope, and effect of the FFCA. EPA and the affected facility would jointly sign a Federal Facilities Compliance Agreement, and, will provide that the violating facility take specified steps to achieve full compliance with the underlying statute.

Generally, the RCRA (Subtitle C/Hazardous Waste, Subtitle D/Solid Waste, and Subtitle I/Underground Storage Tanks), the Safe Drinking Water Act, and the Clean Air Act confer penalty or order authority upon EPA against Federal facilities. Thus, these statutes authorize EPA to assess penalties or issue orders. There were no such FFCA agreements, penalties, and fines or violations issued against Southwestern or any of its Federal employees during 2016.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

The NEPA of 1969 was enacted by Congress to establish a framework for environmental review of actions carried out by the Federal government. NEPA imposes certain responsibilities on the Federal government including an obligation to assure a safe and healthful environment free from degradation and to achieve a wide range of beneficial uses without risk to health or safety. NEPA was enacted for two principal purposes: to ensure that Federal agencies carefully consider significant environmental impacts arising from projects under agency jurisdiction, and to establish a procedure by which members of the public are afforded an opportunity for meaningful participation in the agency's consideration of the proposed action. Southwestern must prepare, to varying degrees depending on project actions, documentation regarding these considerations, and provide recommendations for Federal actions that may significantly affect the environment. NEPA documentation includes categorical exclusions (CX), Environmental Assessments (EA), Records of Decisions (ROD), Finding of No Significant Impact (FONSI), Environmental Impact Statements (EIS), and Final Environmental Impact Statements (FEIS). A summary of the 2016 Southwestern NEPA actions is shown *Table 1*.

Table 1. 2016 Summary of NEPA Actions

NEPA Action	Total	NEPA Action	Total
CXs Completed	11	FEISs Completed	0
EAs Completed	0	EISs in Process	0
EAs In Process	0	RODs Issued	1 (DOE is the Lead Federal Agency for Southwestern)
FONSI Issued	0	Total Number of NEPA Actions	12

In December 2014, the DOE, in consultation with Southwestern, issued a draft EIS for public comment. The draft EIS pertained to a proposed project related to an application submitted to DOE, through Section 1222(b) of the Energy Policy Act of 2005, that authorizes the DOE, acting through and in consultation with Southwestern (Southwestern; collectively, DOE), to participate with other entities in designing, developing, constructing, operating, maintaining, or owning new electric power transmission facilities and related facilities located within any state in which Southwestern operates, herein referred to as “participation.” DOE accordingly issued a Request for Proposals (RFP) for New or Upgraded Transmission Line Projects in June 2010. Clean Line Energy Partners LLC of Houston, Texas, the parent company of Plains and Eastern Clean Line LLC and Plains and Eastern Clean Line Oklahoma LLC (collectively, Clean Line), submitted an application in July 2010 in response to the RFP, consisting of the [Plains & Eastern Clean Line Transmission Project](#) (Project). Prior to making a determination whether to participate in the proposed Project, DOE had to evaluate the proposed Project, in consultation with Southwestern, through the NEPA process and other selected criteria. A FEIS was issued November 2016, and a ROD was signed on March 25, 2016 by the Secretary of the Department of Energy.

Southwestern also maintained compliance with 10 CFR Part 1021 NEPA review requirements by conducting NEPA reviews; 11 CXs were issued. CXs are classes of actions that are categorically excluded from further NEPA review. A summary of 2016 NEPA CXs are listed in *Table 2* below.

Table 2. 2016 NEPA Categorical Exclusions

Project Name (10 CFR Part 1021, Appendix B Reference)
Sallisaw Interconnection Upgrades (Part B4.11)
Transmission Line 3101 Structure Changeout & Access Road Upgrade/Easement Acquisition (Part B4.6)
Line 3001C, Structure 83 Jakes Creek Erosion Repair Project (Part B4.6)
Nixa Substation Ring Bus Upgrade Project (Part B4.6)
Gore Shield Wire Replacement Project (Part B4.6)
Gore Line Building Extension (Part B1.15)
Nixa Land Purchase and Communication Tower Construction Project (Part B1.19)
Neosho to Carthage to LaRussell Transmission Line Upgrade and Rebuild Project (Part B4.6)
Mingo Ditch Structure Replacement Project, Line 3007, Structures 930-932 (Part B4.6)
Chimney Hill Solar Project Interconnection with PEC & Interface with SWPA Switchyard (Part A9)
Transmission Line Segment Modification, Line 3004, Structures 39, 39A, and 40 (Part B4.6)

TOXIC SUBSTANCES CONTROL ACT (TSCA)

The TSCA regulations prohibit the manufacture, processing, and distribution of PCB in commerce, except as exempted by EPA. TSCA established chemical reporting requirements and standards that apply to manufacturers, importers, and processors. The EPA, through the TSCA regulations, also regulate the use, labeling, and disposal of PCBs. Some states, such as Arkansas, regulate PCB disposal and handling through their state RCRA Programs. The TSCA regulations also prescribe elements of requirements for Southwestern’s radon, lead-based paint, and asbestos aspects.

Southwestern has an ongoing initiative to reduce and/or eliminate oil PCB concentrations in its testable electrical equipment to <50 parts per million (ppm) PCB content. All high voltage oil-circuit breakers and associated bushings have been replaced with gas-circuit breakers. All remaining oil containing electrical breakers and transformers have tested < 50 ppm PCB content. Some of the older bushings attached to these breakers are assumed to contain > 50 ppm PCB, but are not testable until the end of their useful life as testing will render the

equipment unusable. Southwestern has no known equipment that contains or is assumed to contain 500 ppm or greater PCB concentration of oil or related substance. Southwestern disposes of PCB-contaminated equipment within 30 days of removal from service or when it has been declared excess to Southwestern's needs, unless the item has been designated as spare piece of equipment still fit for service. PCB-contaminated equipment stored past 30 days from the initial out-of-service date is stored in one of Southwestern's two approved PCB Activity Database PCB Storage Facilities located in Gore, Oklahoma and Springfield, Missouri. Southwestern's disposal facility audit criteria are used to evaluate and select an appropriate and qualified facility (or facilities) to accept Southwestern's PCB-contaminated electrical equipment or mineral oil. These disposal requirements limit Southwestern's long-term risk, promote environmental stewardship, encourage the recycling or reuse of products when possible, and facilitate disposal requirements at reasonable costs.

Federal agencies are required by the Indoor Radon Abatement Section of TSCA to conduct studies of radon levels in Federal buildings. Radon is an odorless, invisible radioactive gaseous element formed in the decay of radium. Radium occurs naturally in the air, water, and soil. The Springfield Maintenance Facility complex had previous instances of levels above the recommended concentrations. Engineering and administrative control measures have been implemented, including periodic radon monitoring and sample testing, resulting in the level of exposure to personnel being reduced and maintained well below permissible exposure limits. For 2016, no changes were made to any facility which may have warranted additional radon monitoring or investigations.

FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)

FIFRA directs EPA to register pesticides to ensure that, when used according to label instructions, they will not present unreasonable risks to human health or the environment. Pesticides include insecticides, anti-foulants, fungicides, rodenticides, disinfectants, and plant growth regulators. Depending on pesticide properties and use patterns, pesticides can leach through soils and contaminate groundwater. This is especially true where the water table is close to the surface, and/or soils are highly permeable. Appropriately, state-licensed personnel and contracted firms accomplish all vegetation ROW herbicide application in accordance with all regulations.

Southwestern has managed concerns about the use of pesticides through conservative means. Southwestern contracts pest management needs at its maintenance facilities through local vendors. Guidance for the use of herbicides at substation/switchyards, pole yards, microwave/radio sites, and along the transmission line ROW is managed according to Southwestern's Vegetation Management EAs and subsequent FONSI stipulations. The EAs/FONSIs are reviewed periodically for continued effectiveness and conformance with environmental requirements. Only herbicides approved through EA/FONSI approved selection criteria are utilized. There were no incidents cited by state or federal regulators, regarding pesticide or herbicide misuse, during 2016, at any Southwestern facilities or along its ROW.

AIR QUALITY AND PROTECTION

CLEAN AIR ACT (CAA)

The CAA was promulgated "to protect and enhance the quality of the Nation's air resources to promote public health and welfare, and the productive capacity of its population." The EPA is required to set National Ambient Air Quality Standards that define clean air levels. The EPA set standards for six "criteria" pollutants: carbon monoxide, lead, ozone, nitrogen oxides, sulfur oxides, and particulate matter. The EPA also established New Source Performance Standards, National Emission Standards for Hazardous Air Pollutants (NESHAPs), and standards for mobile sources. Air quality standards are achieved by the states through State Implementation Plans (SIP). The SIPs establish emission limits and compliance schedules for pollution sources.

Southwestern has facilities in four states: Missouri, Arkansas, Texas, and Oklahoma. In all states, the air pollution control regulations and individual pollutant levels apply to each facility separately, not to Southwestern

operations as a whole. Established under the CAA (section 176(c)(4)), the General Conformity (GCR) rule plays an important role in helping states and tribes improve air quality in those areas that do not meet the National Ambient Air Quality Standards (NAAQS). Southwestern's sites are generally located in rural areas that are attainment or non-maintenance areas for criteria air pollutants. If a site is in a non-attainment or a maintenance area for a criteria air pollutant, a GCR applicability analysis must be performed. Southwestern's maintenance and operations types of actions are exempt from the CAA conformity requirements as these projects result in "no or de minimis emissions" and have emissions that are not "reasonably foreseeable." Additionally, DOE Power Marketing transmission activities involve routine maintenance and repair activities and routine operation of facilities, mobile assets, and equipment which are exempt activities under the GCR.

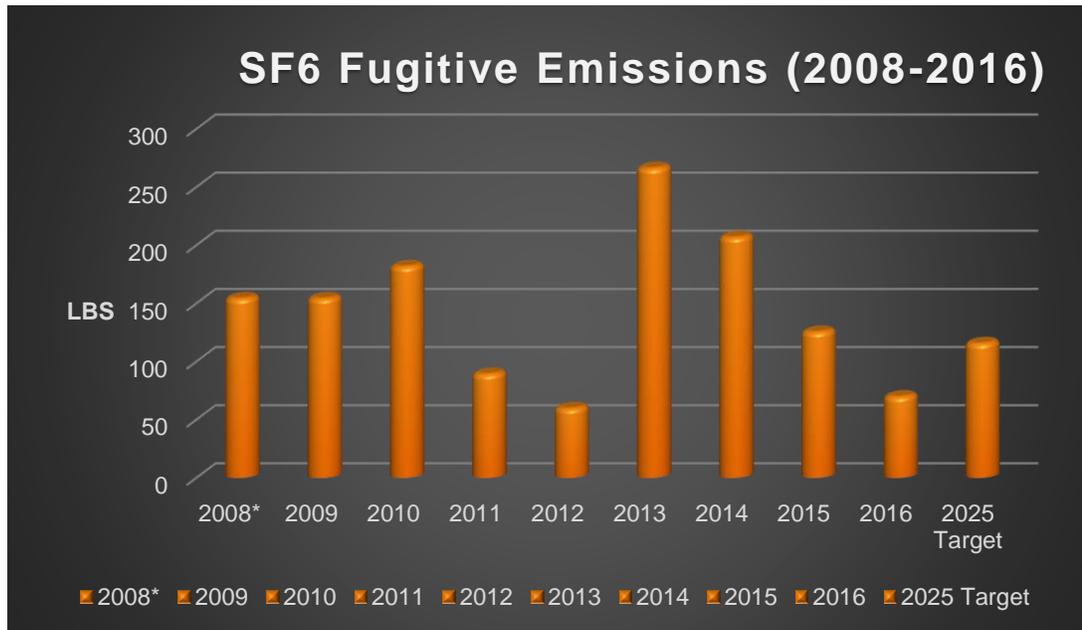
Southwestern's Asbestos Maintenance Standard (AMS) governs its compliance with potential asbestos fiber release, and is in compliance with both NESHAP and Occupational Safety and Health Administration (OSHA) asbestos regulations for employee worker protection. The AMS requires that exposure assessments, including personal and area air monitoring, be conducted for all OSHA Class III and IV work activities performed by trained maintenance personnel, unless Southwestern can provide evidence that a work activity would have fiber releases below the permissible exposure limit of 0.1 fibers/cubic centimeter. Records of exposure assessments are retained by the applicable area maintenance office and corporate office. Applicable maintenance employees receive the appropriate level of annual Asbestos Awareness training. Those employees who are involved in activities in which disturbance occurs receive Class II, III, and IV asbestos training as applicable. Southwestern contracts out most Class I and II asbestos work activities. Southwestern last conducted a Site-Wide Asbestos Containing Materials and Lead Paint Inventory for 24 facilities during 2012.

Since the EPA promulgated the Reciprocating Internal Combustion Engine (RICE) NESHAP, Southwestern's facilities that operate emergency generators have become subject to these regulations, and are required to comply with those parts of the rules that are applicable. Southwestern maintains two stationary maintenance generators at its maintenance facilities, and approximately numerous generator units at its communication facilities. Southwestern completed a RICE NESHAP Applicability Determination on its fleet of emergency generators to determine the applicable requirements per RICE NESHAP Subpart ZZZZ, New Source Performance Standards (NSPS) Subpart IIII, NSPS Subpart JJJJ, and any relevant state rules. As part of the analysis, an evaluation of current emergency generator maintenance practices and the data retention practices thereof, and how these meet the applicable regulatory requirements will be performed. Southwestern has submitted appropriate state notifications, is maintaining the required data, and performs routine preventative maintenance according to the manufacturer's recommendations and Southwestern's maintenance and inspection standard operating procedures.

In addition, Southwestern is regulated under the Mandatory Greenhouse Gas (GHG) Reporting Rules per 40 CFR Part 98 Subpart DD. Southwestern utilizes SF₆, a GHG agent, as an insulation gas within its gas-circuit breakers throughout its substations and switchyards. The rule requires that owners and operators of electric power system facilities, with a total system-wide nameplate capacity exceeding 17,820 pounds of SF₆, report emissions of SF₆, annually, on EPA's electronic Greenhouse Gas Reporting Tool (eGGRT). Annually, an Air Applicability Determination is performed to assess applicability to the rule. For 2016, Southwestern had a total of 17,120 pounds, system-wide, name-plate capacity of SF₆ containing equipment. Therefore, Southwestern is not required to report 2016 SF₆ emissions through the eGGRT. However, the emissions data was collected and reported through DOE reporting mechanisms to help track and achieve DOE mandated GHG reduction targets in conjunction with the requirements of Executive Order (EO) 13693. For report year 2016, Southwestern reported 70 pounds of SF₆ fugitive emissions, which is equal to 725 metric tons of carbon dioxide emission equivalents. Southwestern began tracking SF₆ emissions in 2008, and after the implementation of an aggressive repair and replacement program for leaking and aging SF₆ containing equipment, millions of pounds of carbon dioxide emission equivalents have been diverted from being emitted into the atmosphere by aggressively addressing

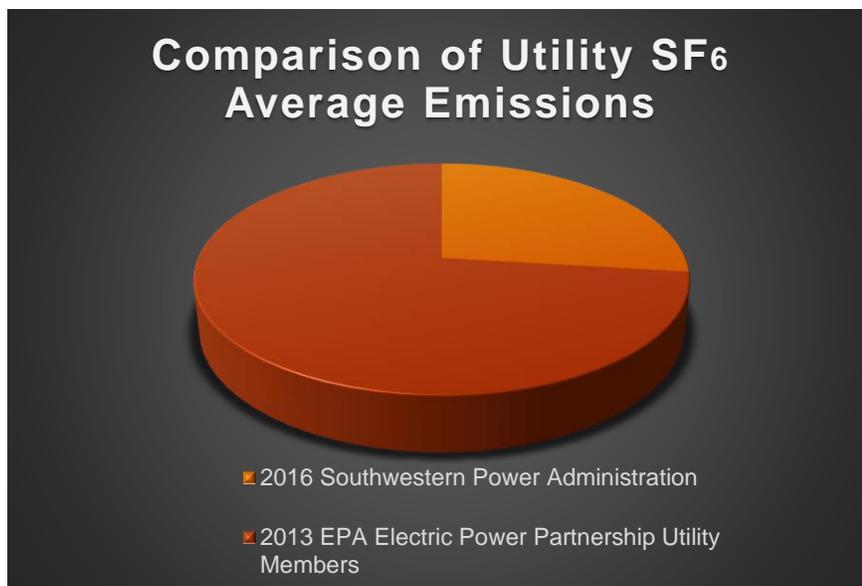
aging leaking gas-circuit breaker equipment, repairing leaks, and performing preventative maintenance. *Chart 1*, below, provides a summary of Southwestern’s SF₆ fugitive emissions since the base measurement year 2008.

Chart 1. Southwestern’s SF₆ Fugitive Emissions



For 2013, the EPA Electric Power Partnership Utility Members average SF₆ emission rate was 1.9%. By comparison, Southwestern’s 2016 emission rate was 0.7% SF₆. The comparison is graphically depicted in *Chart 2* below. This rate is calculated by dividing the total pounds of gas emitted by the system-wide container capacity. EO 13693 requires a 25% reduction in Scope 3 GHG, which for Southwestern is largely SF₆ Gas Emissions, by the year 2025. Southwestern has successfully achieved this target.

Chart 2. Comparison of Utility SF₆ Average Emissions



WATER QUALITY AND PROTECTION

CLEAN WATER ACT (CWA)

The CWA regulates the discharge of pollutants into Waters of the U.S. from any point source, including industrial facilities and sewage treatment facilities. The CWA also regulates storm water runoff from certain industrial sources, requires reporting and cleanup of oil and hazardous substance spills in Waters of the U.S., protects Waters of the U.S., requires that a permit be obtained when a project has the potential to adversely affect wetlands, and requires spill prevention plans for sites that store oil and other petroleum products. The EPA has established a requirement to have a National Pollutant Discharge Elimination System permit for the discharge of storm water from facilities with point sources.

Southwestern has determined that a full-scale groundwater monitoring program is not warranted. However, Southwestern will continue to identify existing and potential sources of groundwater contamination. Should any information indicate that any Southwestern activities might adversely affect the groundwater, Southwestern will implement a site-specific groundwater monitoring program.

Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill material into Waters of the U.S., including wetlands. Proposed activities are regulated through a permit review process. An individual permit is required for potentially significant impacts. Individual permits are reviewed by the U.S. Army Corps of Engineers, which evaluates applications under a public interest review, as well as the environmental criteria set forth in the CWA Section 404(b)(1) guidelines, regulations promulgated by EPA. Some states have assumed this permitting authority and regulate these activities. For most discharges that will have only minimal adverse effects, a general permit may be suitable. General permits are issued on a nationwide, regional, or state basis for categories of activities. Southwestern applied for one such general permit, *Nationwide Permit No. 13-Bank Stabilization*, Permit Number 2015-00378, for a bank stabilization project located in Pope County, Arkansas where Southwestern's line crosses a Jakes Creek and erosion of the bank was destabilizing the transmission line structure support tower.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

As previously noted, the NPDES is the primary mechanism used by EPA to manage point source discharges. NPDES permits are required for the discharge of pollutants from certain point sources, which are categorized by the North American Industry Classification System codes, into Waters of the U.S.

Permitting of Southwestern's substation facilities would not be required under 40 CFR Part 122 (with the exception being facilities located in Missouri containing oil and water separator devices). In summary, Southwestern's substation facilities do not meet the definition of an "industrial activity" and would be excluded as defined in 40 CFR Part 122.26(b) (14). The *1992 EPA Frequently Asked Questions #16 and #17* provides clarification regarding the applicability electrical substation facilities. Southwestern's substations are not located within facilities that have generation units; this scenario could potentially cause substation storm water discharges to become permitted under the NPDES permitting rules.

The State of Missouri views oil/water separators, which for the purposes of Southwestern's facilities are secondary containment structures surrounding electrical power transformers, as mechanical treatment devices and requires such facilities to obtain a Missouri NPDES General Operating Permit MOG14 for Oil/Water Separators. This Permit authorizes the discharge from oil/water separators and similar waste water treatment devices whose sole function is the treatment of storm water or water without detergents or additives used to rinse or wash down pavements. This Permit applies to establishments such as vehicle repair shops, transformer stations and pipeline compressor stations. Southwestern has four such facilities in Missouri that require NPDES coverage under this Permit. Annual Discharge Monitoring Reports are required for the sites with NPDES permits.

There were no reported exceedances or nonconformance's in NPDES permit related storm water discharges during 2016 at these facilities.

In addition, Southwestern continued to discharge storm water under a Storm Water Construction NPDES permit associated with a new facility construction project located in Nixa, Missouri. Routine inspections of the site to ensure conformance with permit provisions were conducted to confirm that storm water discharges conformed to water quality standards. There were no reported exceedances or nonconformance's during the reporting period.

SAFE DRINKING WATER ACT (SDWA)

The SDWA requires EPA to establish primary drinking water standards for any contaminants that may have an adverse effect on public health. As a result, EPA developed primary drinking water maximum contaminant levels (MCLs) and secondary MCLs. Southwestern utilizes city water at its manned facilities and rural water at many of its unmanned electrical substation control building facilities. Southwestern has several continuously unoccupied electrical substation control buildings with non-potable wells that serve to provide only facility toiletry functions. The wellheads are protected by locks which are routinely inspected to protect the integrity of the groundwater system. During 2016, Southwestern maintained compliance with the SDWA.

OIL POLLUTION ACT

The Oil Pollution Act of 1990 amended the Clean Water Act and addressed the wide range of problems associated with preventing, responding to, and paying for oil pollution incidents in navigable Waters of the U.S.. It created a comprehensive prevention, response, liability, and compensation regime to deal with vessel- and facility-caused oil pollution to United States navigable waters. The regulation requires these facilities to develop and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans and establishes requirements for procedures, methods, and equipment requirements.

Several of Southwestern's substation facilities contain large volumes of transformer oil and are sited near *navigable waters* or *Waters of the U.S.* Southwestern has developed and implemented effective SPCCs at 11 of its applicable facilities. The majority of these SPCCs were revised, updated and reissued during 2015. Annually, all SPCCs are reviewed, updated as-needed, and signed by management. *Table 3* below provides an overview of SPCC Plans and their review and renewal cycles.

Table 3. SPCC Facility Plans

SPCC Plan Expiration	SPCC Plan Review & Substation Facility Location(s)	Annual Review/Maintenance Division Director Signature
December 8, 2018	5 Year Recertification/Review SPCC Plans- Professional Engineer (PE) Signature Required (Table Rock, MO, Springfield, MO)	November, Annually
April 22, 2021	5 Year Recertification/Review SPCC Plans- PE Signature Required (Eufaula, OK)	November, Annually
November 9, 2020	5 Year Recertification/Review SPCC Plans- PE Signature Required (Carthage, MO, Paragould, AR, New Madrid, MO, Poplar Bluff, MO, Nixa, MO, Norfolk, AR, Kennett, MO, Weleetka, OK)	November, Annually

There were no reportable instances of spills at any of Southwestern's facilities during 2016. All official plans are located onsite at the substation facility, as-well as reference copies being located at the nearest lead maintenance office hub. Spill clean-up kits are also located at the substation facilities to help ensure the quick control of a spill, and minimize effects to the nearby environment.

OTHER ENVIRONMENTAL STATUTES

ENDANGERED SPECIES ACT (ESA)

The ESA was established to protect aquatic and terrestrial animals, as well as plant species that are likely to become endangered in the foreseeable future (threatened), or are in danger of extinction (endangered). Federal agencies are required to ensure that any of their associated actions do not adversely impact threatened or endangered (T&E) species. If listed species may be affected, then the agency must consult with the United States Fish and Wildlife Service (USFWS) or National Marine Fisheries Wildlife Service, whichever is appropriate. All maintenance and engineering construction projects, as well as real property transfers, are evaluated for potential adverse impacts to known T&E species. Southwestern has cooperated with the USACE and the USFWS to manage releases from Keystone, Eufaula, and Denison dams for the protection of the endangered interior least tern, a migratory shore bird that nests on sand bars and islands in the rivers downstream from those projects. The interior least tern was listed as an endangered species by the USFWS in 1985. Since then, Southwestern has worked with the Tulsa and Little Rock Districts of the USACE, USFWS, and other entities to preserve and build habitat, and support interior least tern reproduction while preserving hydropower benefits. After the issuance of a final Biological Opinion in 2013, Southwestern has achieved compliance with protection measures more easily, due to combined agency least tern nesting goals. Additionally, Southwestern is working with entities nationwide on a Conservation Plan and Monitoring Plan as part of the species delisting efforts that were recommended by the USFWS in 2013. Southwestern is committed to providing the resources necessary for T&E species habitat protection and/or least tern habitat maintenance work for applicable projects and undertakings.

Throughout 2016, Southwestern continued to pursue a draft maintenance and operations Oklahoma Programmatic Biological Opinion (PBO) from the USFWS Oklahoma Ecological Services Office. This PBO would enable Southwestern to utilize the ability to expedite, minimize, or simplify the Section 7 ESA consultation

protocol for selected, proposed Southwestern initiated maintenance and operation activities within the State of Oklahoma. Prior to December 2013, Southwestern's Oklahoma project activities and undertakings were carried out under the previous PBO, in which, the American burying beetle (ABB) was identified as the primary Federally Endangered species of concern for Southwestern's Oklahoma project activities. See *Figure 3* for an overlay of Southwestern's Transmission System as compared to the ABB habitat range. Southwestern will continue to work closely with the USFWS in Oklahoma to preserve

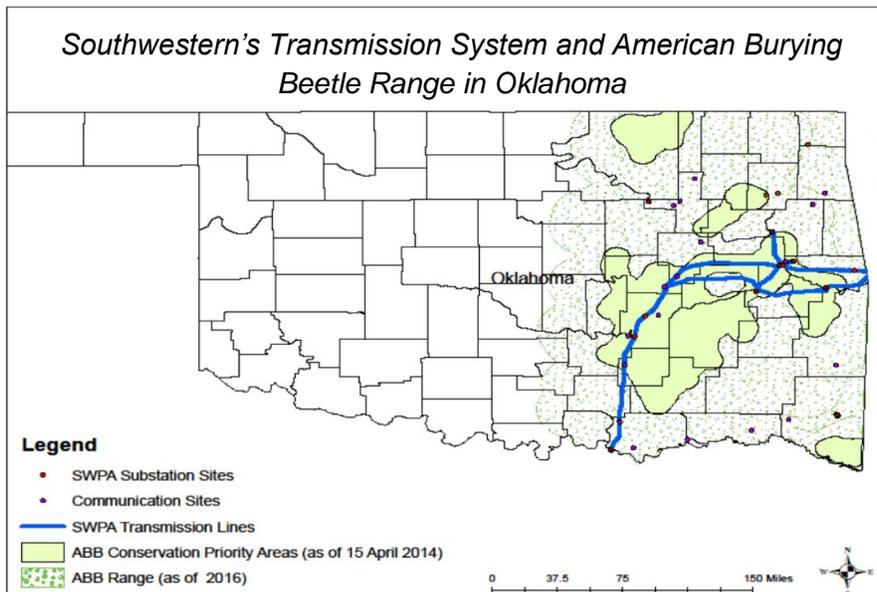


Figure 3 Southwestern's Transmission System and ABB Range in Oklahoma

ABB habitat and to minimize adverse effects to this species during affected project activities. One ABB Presence/Absence survey was conducted in an area located near the Canadian River in Okfuskee County, Oklahoma which was slated for some transmission structure replacement work and access road repair; no ABBs were found and the project was allowed to proceed without adverse effect to the T&E species.

During 2016, Southwestern reviewed and/or consulted in six projects which were processed and managed through the procedures required in Section 7 of the ESA. There were no known adverse impacts or incidences regarding direct "take" to any known T&E species during 2016.

NATIONAL HISTORIC PRESERVATION ACT

All Federal agencies, including Southwestern, have responsibilities under the National Historic Preservation Act (NHPA) of 1966. Under Section 106 of the Act, all Federal agencies will take cultural resources into account during agency project planning. The intent is to ensure that agency actions do not inadvertently disturb or destroy significant cultural resources. Cultural resources can include, but are not limited to, prehistoric and historic archaeological materials and sites located on or below the ground surface, historic structures (buildings, sites, structures, or objects) that are more than 50 years old, cultural and natural places, traditional cultural properties, and sacred objects important to a group or groups of Native Americans. A compliance process was established by the President's Advisory Council on Historic Preservation (36 CFR 800) that, when followed, ensures compliance with provisions of the Act. The Act and the regulations do not mandate an outcome, only that an agency considers the effects its actions may have on significant resources.

Under Section 110 of the Act, each agency is required to develop and carry out a systematic program to inventory all cultural resources on lands which they own, and nominate to the National Register of Historic Places any properties that meet the eligibility requirements. In 2006, Southwestern completed a Section 110 analysis, titled *National Register of Historic Places Evaluation for Electrical Stations and Maintenance Facilities within Southwestern Power Administration*, for its existing facilities, owned in-fee, in the three primary states for which Southwestern conducts its activities. In this analysis, there were no properties identified for eligibility on the NRHP. Southwestern will conduct additional Section 110 analyses for groups of new properties at appropriate intervals. In accordance with the cultural resource Programmatic Agreements for each state stakeholder, these documents were submitted to the Arkansas, Oklahoma, and Missouri State Historic Preservation Offices, their state Archeological Survey Offices, and interested Federal Indian Tribes/Nations (Tribes) for consultation. None of Southwestern's buildings, associated structures, or transmission lines are eligible for listing in the NRHP. No additional cultural resource investigations were recommended for any of the facilities, except for archeological monitoring of deep disturbances at several Southwestern facilities, located in the New Madrid Fault Line Seismic region, when future project disturbance activities are slated to occur.

In August 2014, Tribes, the Oklahoma, Arkansas, and Missouri State Historic Preservation Offices (SHPO), the Oklahoma Archeological Survey (OAS), the Advisory Council on Historic Preservation (ACHP), and Agency stakeholders received an invitation to participate in the creation of a new Multi-State Programmatic Agreement (PA) for Southwestern Power Administration's (Southwestern) maintenance and operations activities conducted in Oklahoma, Arkansas, and Missouri that when signed, would eventually combine and replace the existing, three-separate, state-based PA's. Consultations with the ACHP, SHPOs and OAS continued during 2014-2016. The draft PA will go back out to the Tribes to re-initiate the formal consultation process during 2017. Southwestern hopes to have the PA fully executed in 2018 at which time the current three separate state-based PAs would be terminated by the newly executed Multi-State PA.

Per the stipulations in the current Programmatic Agreement's, Southwestern updates its cultural resource inventory database on a three-year cycle. The database was last updated in 2012. This cultural resource inventory database provides a comprehensive repository of known cultural resources or artifacts, on lands owned or administered by Southwestern (and within a one-half mile radius of them) and serves as the foundation of a

proactive cultural resource management program that will ensure compliance with local, state, Tribal, and Federal regulations. The cultural resource inventory database is next scheduled to be updated and then integrated into Southwestern’s Geographical Information System (GIS) Database in 2017. *Table 4* depicts the number of cultural resource sites identified, in Southwestern’s cultural resource inventory database, within one-half mile radius of Southwestern’s ROW and facilities.

Table 4. Recorded Sites Near Southwestern Facilities

Inventory of Recorded Sites (within ½ mile of ROW/Facilities)				
NRHP Eligibility	AR	MO	OK	Total
Not Eligible	133	45	14	192
Undetermined	491	360	164	1015
Potentially Eligible	12	3	7	22
Eligible	40	15	9	64
Listed	5	12	4	21
Total Number of Sites:	668	435	198	1314

Southwestern does not qualify as a federal land management agency for non-owned, easement obtained, transmission line ROW, and therefore would not be under obligation to manage or maintain historic properties found within these locations. If historic properties are identified during Section 106 analysis, Southwestern’s normal practice is to avoid adverse effects and subsequent impacts by modifying a project’s design or the planned activity and follow the stipulation outlined in the PAs.

MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act prohibits the taking, possessing or transporting of any migratory bird, nest, egg, or part of a migratory bird without a permit. The protected avian species are listed in CFR Part 50, Subpart 10.13. This list consists of over 1,000 distinct types of avian species. Southwestern considers the effects to migratory birds as part of the NEPA project analysis process for each new proposed activity or project. In 2017, Southwestern will develop and implement an Avian Protection Plan that will be based upon Guidelines that were developed by the Avian Powerline Interaction Committee (APLIC), and other avian related species regulatory laws. Due to the nature and configuration of high-voltage equipment (increased distance between current carrying conductors, and the conductors to a ground contact potential), Southwestern experiences very few avian collisions, perching, or nesting incidences. Southwestern does have documented raptor nests on some transmission structures located near dams or large bodies of water. These nests are left undisturbed unless they cause an emergency safety concern. In this case, Southwestern would contract-out the removal or relocation of the nest, chicks, or eggs to an individual or firm with an appropriate USFWS permit.

SUSTAINABILITY

In conjunction with the DOE Order 436.1, *Departmental Sustainability*, Southwestern has established several sustainability [Environmental Management System Objectives and Targets](#) which are implemented, maintained, and monitored through the *Environmental Management System* program. The sustainability Targets and Objectives are measured and recorded annually. Southwestern remains on-track to meet goals which are applicable to DOE Power Marketing Administrations.

Southwestern, along with other competing water user groups, depends on water to meet its contractual obligations to its customers. Some of the competing uses include municipal water supply, hydroelectric power, fish and wildlife, tourism, navigation, flood control, irrigation, swimming, and boating. Although water is a renewable resource, water is dependent upon nature. It varies in its amount and timing. And now more than ever there are demands upon the earth's water. Southwestern dedicates significant effort in coordinating operating activities with groups such as the USACE, state fish and wildlife agencies, USFWS, organized recreational groups, and other water user groups to find ways to accommodate each user's needs and still meet electrical generation requirements. Making the best use of water resources requires understanding of each user's specific needs. In the years and generations to come, Southwestern desires not only to continue to serve its customers with America's cleanest source of renewable energy, but also to work cooperatively with the competing users to conserve the natural resources. Southwestern staff attended Migratory Bird Training presented by the U.S. Fish and Wildlife and will implemented a training program for all affected employees in 2017.

FLOODPLAIN MANAGEMENT AND WETLAND MANAGEMENT

Southwestern must conform to the DOE Floodplain and Wetland Regulations per the requirements outlined in 10 CFR Part 1021 and 1022 and EO 11988. As part of the NEPA project analysis protocol, any proposed action or project that may potentially impact floodplains and/or wetlands is carefully evaluated according to regulations. During 2016, Southwestern did not have any floodplain or wetland action projects which warranted a floodplain assessment. Southwestern does have a few facilities that are located within a floodplain or floodway. However, there were no modifications to those areas or facilities during 2016.

POLLINATOR INITIATIVES

Pollinators are vital to keeping fruits, nuts, and vegetables in our diets. Honey bee pollination alone adds more than \$15 billion in value to agricultural crops each year in the United States. Over the past few decades, there has been a significant loss of pollinators, including honey bees, native bees, birds, bats, and butterflies, from the environment. The problem is serious and requires immediate attention to ensure the sustainability of our food production systems, avoid additional economic impact on the agricultural sector, and protect the health of the environment. As a result, in 2014, President Obama issued a [Presidential Memorandum](#) directing an interagency Task Force to create a *Strategy to Promote the Health of Honey Bees and Other Pollinators*.

Since issuance of this Memorandum, Southwestern, along with other Power Marketing Administrations, have assessed their activities and work practices to see how they may be able to effectively and reasonably contribute to the protection of pollinator species while maintaining their agency's Federal mission. The ROW managed by the Power Marketing Administration organizations cross urban, suburban, and agricultural land sometimes not suitable for pollinator best management practices (BMP). The PMAs have many BMPs, effective at promoting pollinator activity and proliferation for many of the pollinator species, which are already in place on suitable ROW land. These BMPs include removing invasive species, using native seeds and species, and managing vegetation to create low to mid-height sustainable native plant communities.

CLIMATE CHANGE

The DOE was directed by Section 9505 of the Secure Water Act of 2009 (Public Law 111-11) to submit a report to Congress on the effects of climate change on Federal hydropower systems. The newest report, [Effects of Climate Change on Federal Hydropower-The Second Report to Congress](#), which included Southwestern as well as other DOE Power Marketing Agencies, analyzed climate change effects on water available for hydropower operations and the future power supplies marketed from Federal hydropower projects. The assessment addresses potential changes in operation or contracting practices that could mitigate adverse impacts of climate change on hydropower operations. Potential climate change adaptation strategies are also identified. The report helps to provide a better understanding of the sensitivity of Federal hydropower plants to water availability, and it provides guidance in planning future actions that will enable adaptation to natural weather variability and change. Southwestern has a [Strategic Plan](#) which includes weather variability related planning strategies.

SUMMARY OF ENVIRONMENTAL PERMITS & IDS

GORE, OKLAHOMA, MAINTENANCE UNIT GEOGRAPHICAL AREA

- Gore Substation and Maintenance Facility -RCRA Very Small Quantity Generator- EPA ID# OK2891632463
- Gore Substation and Maintenance Facility -Small Quantity Handler of Universal Waste- EPA ID# OK2891632463
- Gore Substation and Maintenance Facility PCB Activity Database (Generator/Storage)- EPA ID# OK2891632463
- Oklahoma Department of Agriculture, Food, & Forestry- Pesticide Applicators License #6652-000

SPRINGFIELD, MISSOURI, MAINTENANCE UNIT GEOGRAPHICAL AREA

- Springfield Maintenance Facility and Substation-RCRA Very Small Quantity Generator- EPA ID# MO8891632467
- Springfield Maintenance Facility and Substation-Small Quantity Handler of Universal Waste - EPA ID# MO8891632467
- Springfield Maintenance Facility and Substation PCB Activity Database (Generator/Storage)- EPA ID# MO8891632467
- Permit #MO-G140036, Missouri Dept. of Natural Resources
NPDES Discharge Permit, Table Rock Substation Oil/Water Separator
- Permit #MO-G140037, Missouri Dept. of Natural Resources
NPDES Discharge Permit, Nixa Substation Oil/Water Separator
- Permit #MORA07212, Missouri Dept. of Natural Resources
Land Disturbance NPDES Storm Water Construction Permit, Nixa Control Center

JONESBORO, ARKANSAS, MAINTENANCE UNIT GEOGRAPHICAL AREA

- Jonesboro Maintenance Facility and Substation-RCRA Very Small Quantity Generator- EPA ID# AR0143120681

- Jonesboro Maintenance Facility and Substation-Small Quantity Handler of Universal Waste- EPA ID# AR0143120681
- Jonesboro Maintenance Facility and Substation-PCB Activity Database (Generator)- EPA ID# AR0143120681
- Permit #MO-G140032, Missouri Dept. of Natural Resources NPDES Discharge Permit, New Madrid Substation Oil/Water Separator
- Permit #MO-G140033, Missouri Dept. of Natural Resources NPDES Discharge Permit, Kennett Substation Oil/Water Separator

ENVIRONMENTAL MANAGEMENT SYSTEM

Southwestern's Environmental Management System (EMS) outlines a systematic process that guides Southwestern activities to ensure implementation of environmental requirements and to encourage the achievement of continuous improvement. Southwestern's EMS Policy states:

"Southwestern will strive for excellence in the protection of the environment by conducting operations in a manner that meets DOE guidelines and applicable Federal, state and local environmental regulations, and other requirements to which the agency subscribes. Southwestern will strive for continual improvement and pollution prevention. The ISO Standard 14001:2004 will be used as a guide."

The EMS Policy and Manual are endorsed by Southwestern's senior management. EMS Aspects and Impacts have been identified for all agency activities and are reviewed annually. Legal and other requirements are compiled in a matrix. Southwestern has identified [Objectives and Targets](#) to assist in achieving and meeting the commitments of the Environmental Policy. Performance of the Objectives and Targets are measured periodically and recorded publicly on the www.SWPA.gov website. The Objective and Targets are reviewed and updated as-needed. Federal employee position descriptions include job specific responsibilities to ensure Southwestern's operations are performed consistent within the guidelines and objectives of the EMS. Annual EMS and job specific environmental training has been included in the agency training plan. Communication from external parties or stakeholders is documented in an electronic journal. Annual environmental audits and management reviews are scheduled to ensure continual improvement.

In 2016, Southwestern re-confirmed, by internal audit, that its EMS conforms to the International Organization for Standardizations (ISO) 14001:2004 standard, based on the results of a internal audit by internal qualified auditors. The scope of the EMS audit included employee interviews, a physical examination of facilities, and a review of environmental records.

The progress of Southwestern's implementation of the EMS was reported in a Fedcenter DOE EMS Annual Report in which Southwestern achieved a "Green" score. This score is the equivalent to meeting all DOE EMS implementation requirements. Annual ISO 14001 EMS Awareness Training was completed by all Federal and contract employees. For 2016, Southwestern's EMS continued to remain in full conformance with the ISO 14001 Standard and proved to be an effective tool in implementing and integrating environmental requirements throughout the Agency. Southwestern will convert its current EMS program to the updated ISO 14001:2015 standard during 2018.

ENVIRONMENTAL PROGRAM CONTACTS

Danny Johnson

Director | Division of Environmental, Health, Safety and Security

Southwestern Power Administration

danny.johnson@swpa.gov | Office 918-595-6781

1 W 3rd St, Suite 1600, Tulsa, OK 74103

Mistie Pilcher

Environmental Specialist | Division of Environmental, Health, Safety and Security

Contractor for Southwestern Power Administration

mistie.pilcher@swpa.gov | Office 918-595-6743

1 W 3rd St, Suite 1600, Tulsa, OK 74103