

2. Compliance Summary and Community Involvement

DOE operations on ORR must conform to environmental standards established by federal and state statutes and regulations including Executive Orders, DOE orders, contract-based standards, and compliance and settlement agreements. The US Environmental Protection Agency (EPA) and the Tennessee Department of Environment and Conservation (TDEC) are the principal regulating agencies that issue permits, review compliance reports, participate in joint monitoring programs, inspect facilities and operations, and oversee compliance with applicable regulations.

Environmental concerns or problems identified during routine operations or during ongoing self-assessments of compliance status require reporting or discussions with the respective regulatory agencies. The following sections summarize the major environmental statutes and their 2018 status for DOE operations on ORR. Note that the DOE Reindustrialization Program has leased several facilities at ETTP and the Oak Ridge Science and Technology Park to private entities over the past several years. This report does not discuss the compliance status of these lessee operations.

Due to different permit reporting requirements and instrument capabilities, this report uses various units of measurement. The lists of units of measure and conversion factors on pages xxvii and xxviii are included to help readers convert numeric values presented herein as needed for specific calculations and comparisons.

2.1 Laws and Regulations

Table 2.1 is a summary of the principal environmental standards applicable to DOE activities on ORR, their 2018 status, and the sections in this report that provide more detailed information.

Table 2.1. Applicable environmental laws and regulations and 2018 status (continued)

Regulatory program description	2018 status	Report sections
The Emergency Planning and Community Right-to-Know Act , also referred to as the Superfund Amendments and Reauthorization Act Title III, requires reporting emergency planning information, hazardous chemical inventories, and environmental releases of certain toxic chemicals to federal, state, and local authorities.	In 2018 DOE facilities on ORR were operated in accordance with emergency planning and reporting requirements. ETTP, Y-12, and ORNL had no reportable releases of hazardous substances or extremely hazardous substances, as defined by the Emergency Planning and Community Right-to-know Act, in 2018.	3.3.14 4.3.9 5.3.10
The National Environmental Protection Act (NEPA) requires consideration of how federal actions may impact the environment and an examination of alternatives to the actions. NEPA also requires that decisions include public input and involvement through scoping and review of NEPA documents.	During 2018, DOE planning and decision-making activities at ETTP, Y-12, and ORNL were conducted via site-level procedures that provide requirements for project reviews and NEPA compliance. Fifty environmental reviews were completed at Y-12 during 2018. One new environmental evaluation was completed at ETTP in 2018. At ORNL, 91 environmental evaluations were completed during 2018.	3.3.4 4.3.2 5.3.2
The National Historic Preservation Act provides protection for the nation's historic resources by establishing a comprehensive national historic preservation policy.	ORR has several facilities eligible for inclusion in the National Register of Historic Places. Proposed activities are reviewed to determine potential adverse effects on these properties, and methods to avoid or minimize harm are identified. During 2018, activities on ORR were conducted in compliance with National Historic Preservation Act requirements.	3.3.4 4.3.2 5.3.2
ORR Protection of Wetlands Programs are implemented to minimize the destruction, loss, or degradation of ORR wetlands and to preserve and enhance their beneficial value.	Surveys to determine the presence of wetlands are conducted as needed for projects or programs through NEPA and other reviews. Wetland protection on ORR is conducted in accordance with 10 <i>CFR</i> 1022 and Executive Order 11990, <i>Protection of Wetlands</i> .	1.3.6.1 4.5.8.4
	Annual monitoring of remediated wetland sites through 2018 revealed that the wetlands are responding as intended. Also in 2018, a reassessed wetland near Building 2519 was determined to have previously identified boundaries.	5.3.12
The Resource Conservation and Recovery Act (RCRA) governs the generation, storage, handling, and disposal of hazardous wastes. RCRA also regulates underground storage tanks containing petroleum and hazardous substances, universal waste, and recyclable used oil.	Y-12, ORNL, and ETTP are defined as large-quantity generators of hazardous waste because each generates more than 1,000 kg of hazardous waste per month. Each site is also regulated as a handler of universal waste. In addition, several permits have been issued for hazardous waste management units on ORR.	3.3.9 4.3.6 5.3.6

Table 2.1. Applicable environmental laws and regulations and 2018 status (continued)

Regulatory program description	2018 status	Report sections
The Safe Drinking Water Act establishes minimum drinking water standards and monitoring requirements.	The City of Oak Ridge supplies potable water to the facilities on ORR and is responsible for meeting all regulatory requirements for drinking water. Sampling results in 2018 for residual chlorine levels, bacterial constituents, and disinfectant by-products in ORR's water system were all within acceptable limits.	3.3.8 4.3.5 5.3.5
The Toxic Substances Control Act regulates the manufacture, use, and distribution of a number of toxic chemicals.	PCB waste generation, transportation, disposal, and storage at ORR are regulated under EPA identification numbers TN1890090003 and TN0890090004. ETTP operated five PCB waste storage areas at ETTP in 2018. These five PCB storage areas were in RCRA-permitted facilities that meet the PCB regulations for long-term storage when PCB waste is being stored for longer than 30 days, which may be necessary for PCB radioactive waste. In 2018, UT-Battelle, LLC operated nine PCB storage areas and one PCB waste storage area was operated at a UT-Battelle, LLC facility in the Y-12 Complex. The ORR PCB Federal Facilities Compliance Agreement between EPA and DOE continues to provide a mechanism to address legacy PCB-use issues across ORR. The agreement specifically addresses the unauthorized use of PCBs, storage and disposal of PCB waste, PCB spill cleanup and decontamination, PCBs mixed with radioactive materials, PCB research and development, and ORR records and reporting requirements. EPA is updated annually on the status of DOE actions regarding management and disposition of legacy PCBs covered by the ORR PCB Federal Facilities Compliance Agreement.	3.3.13 4.3.8 5.3.9
The Bald and Golden Eagle Protection Act (16 US Code 668-668d) protects bald and golden eagles by prohibiting, except under certain specified conditions, the taking or possession of and commerce in such birds. The act imposes criminal and civil penalties for any such actions.	Bald eagles are known to frequent ORR year-round. The one active bald eagle nest on ORR is protected in accordance with this act. Eaglets have been successfully fledged from a Poplar Creek nesting location in the past.	1.3.6.2
The Endangered Species Act prohibits activities that would jeopardize the continued existence of an endangered or threatened species or cause adverse modification to a critical habitat.	ORR is host to several plant and animal species categorized as endangered, threatened, or of special concern, and these species are protected in accordance with this act.	1.3.6.2
The Migratory Bird Treaty Act protects migratory birds by governing the taking, killing, possession, transportation, and importation of such birds, including their eggs, parts, and nests and any product, manufactured or not, from such items.	ORR hosts numerous migratory birds that are protected under this act.	1.3.6.2

Table 2.1. Applicable environmental laws and regulations and 2018 status (continued)

Regulatory program description	2018 status	Report sections
DOE Order 231.1B, <i>Environment, Safety, and Health Reporting</i> , ensures timely collection, reporting, analysis, and dissemination of information on environment, safety, and health issues.	The <i>2018 Oak Ridge Reservation Annual Site Environmental Report</i> summarizes ORR environmental activities during 2018 and characterizes environmental performance.	All chapters
DOE Order 435.1, Change 1, <i>Radioactive Waste Management</i> , is implemented to ensure that all DOE radioactive waste is managed in a manner that protects workers, public health and safety, and the environment.	Waste certification programs that are protective of workers, the public, and the environment have been implemented for all activities on ORR to ensure compliance with this DOE order.	3.8.1 4.2.3.4 5.8
DOE Order 436.1, <i>Department Sustainability</i> , provides requirements and responsibilities for managing sustainability within DOE to ensure the department carries out its missions in a sustainable manner that addresses national energy security and global environmental challenges and advances sustainable, efficient, and reliable energy for the future.	DOE contractors on ORR have developed site sustainability plans and have implemented environmental management systems that are incorporated with the contractors' integrated safety management systems to promote sound stewardship practices and ensure compliance with this DOE order.	3.2 4.2 5.2
DOE Order 458.1, <i>Radiation Protection of the Public and the Environment</i> , issued in June 2011, canceled DOE Order 5400.5 and was established to protect members of the public and the environment from undue risk from radiation. This order established standards and requirements for operations of DOE and DOE contractors.	In 2018, DOE Order 458.1 was the primary contractual obligation for radiation protection programs for UT-Battelle, LLC and Consolidated Nuclear Security LLC, and for all UCOR work scope areas where existing CERCLA decision documents do not specifically identify DOE Order 5400.5 requirements. A dose assessment, performed to ensure that the total dose to members of the public from all DOE ORR pathways did not exceed the 100 mrem annual limit established by this order, estimated the maximum 2018 dose to a hypothetically exposed member of the public from all ORR potential exposure pathways combined would be about 3 mrem. The 2018 maximum effective dose was about 3% of the limit given in DOE Order 458.1. Clearance of property from ORNL, ETPP, and the Y-12 Complex was conducted in accordance with approved procedures that comply with DOE Order 458.1. There were no unplanned radiological air emission releases from the three major ORR sites in 2018.	4.3.13 5.3.13 3.5.1.3 Chapter 7 5.4.3.2 4.3.11

Table 2.1. Applicable environmental laws and regulations and 2018 status (continued)

Regulatory program description	2018 status	Report sections
DOE Order 5400.5, <i>Radiation Protection</i> , was established to protect members of the public and the environment against undue risk from radiation. This order established standards and requirements for operations of DOE and DOE contractors.	DOE Order 5400.5 is the primary environmental surveillance radiological applicable, relevant, and appropriate requirement for most CERCLA activities across ORR. It will remain in force until the individual CERCLA decision documents are reissued or revised to incorporate DOE Order 458.1. A dose assessment, performed to ensure the total dose to members of the public from all ORR pathways did not exceed the 100 mrem annual limit established by this order, estimated the maximum 2018 dose to a hypothetical exposed member of the public from all ORR potential exposure pathways combined would be about 3 mrem.	Chapter 7
Executive Order (EO) 13186, <i>Responsibilities of Federal Agencies to Protect Migratory Birds</i> , identifies the responsibilities of federal agencies to promote the conservation of migratory bird populations.	A memorandum of understanding entered into by DOE and the US Fish and Wildlife Service meets the requirements under Section 3 of EO 13186. ORR hosts numerous migratory birds that are present either seasonally or year-round. This memorandum, which was updated in September 2013, strengthens migratory bird conservation on ORR through enhanced collaboration between DOE and the US Fish and Wildlife Service.	1.3.6.2
EO 13693, <i>Executive Order -- Planning for Federal Sustainability in the Next Decade</i> , instructs federal agencies to increase efficiency and improve their environmental performance, which will protect our planet for future generations and save taxpayer dollars through avoided energy costs.	EO 13693, <i>Planning for Federal Sustainability in the Next Decade</i> , superseded EO 13514 in fiscal year 2015 and established a new Scope 1 and Scope 2 total reduction target of 40% by 2025. Progress toward achieving DOE sustainability goals is summarized in this report. ORNL, Y-12, and ETTP activities complied with and exceeded the planning and reporting requirements of these executive orders in 2018. Comparing the ETTP fiscal year 2018 total of 19,731 metric tons to the 40% target level of 31,232 metric tons shows that the targeted 40% reduction in greenhouse gas emissions has already been achieved. The Y-12 Complex reduced Scope 1 and 2 greenhouse gas emissions by 55% in 2018. ORNL did not produce an annual site sustainability report, but submitted data in response to a data call from DOE Headquarters Sustainability Performance Office.	3.2.4 3.5.1.5 4.2.3.4 5.2.1.4

Acronyms:

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

CFR = Code of Federal Regulations

DOE = US Department of Energy

EISA = Energy Independence and Security Act

EMWMF = Environmental Management Waste Management Facility

EO = Executive Order

EPA = US Environmental Protection Agency

ETTP = East Tennessee Technology Park

NEPA = National Environmental Protection Act

NPDES = National Pollutant Discharge Elimination System

ORNL = Oak Ridge National Laboratory

ORR = Oak Ridge Reservation

PCB = polychlorinated biphenyl

RCRA = Resource Conservation and Recovery Act

TDEC = Tennessee Department of Environment and Conservation

Y-12 Complex = Y-12 National Security Complex

2.2 External Oversight and Assessments

Table 2.2 lists the inspections of ORR environmental activities conducted by regulatory agencies during 2018. This table does not include internal DOE or DOE contractor assessments, audits, or evaluations.

Table 2.2. Summary of regulatory environmental evaluations, audits, inspections, and assessments conducted at Oak Ridge Reservation in 2018

Date	Reviewer	Subject	Issues
<i>ORNL</i>			
(including UT-Battelle, LLC; UCOR; Isotek Systems LLC; and NorthWind Solutions, LLC activities)			
January 8	TDEC	Notice of Termination for Construction Storm Water Permit Coverage	0
January 22	City of Oak Ridge	CFTF Wastewater Inspection	0
January	TDEC	HSWA Permit SWMUs and Areas of Concern	0
March 29	Knox County Air Quality Management	National Transportation Research Center CAA Inspection	0
April 10–11	TDEC	Annual RCRA Inspection for ORNL (including Transuranic Waste Processing Facility)	0
August 23	City of Oak Ridge	CFTF Wastewater Inspection	0
August 29	TDEC	RCRA Closure Inspection for 7823	0
October 3	TDEC	Annual CAA Inspection for ORNL and CFTF	0
October 24	TDEC	NPDES Inspection	0
<i>ETTP</i>			
February 2	City of Oak Ridge	Sewage Pretreatment Plan	0
February 27 and October 30	TDEC	Annual RCRA Compliance Inspection	0
July 5	City of Oak Ridge	Windshield tour of ETTP	0
<i>Y-12 Complex</i>			
January	TDEC	Inspection of Y-12 Post-closure Permitted Units	0
January 18 and 24	TDEC	Inspection of Landfills II, IV, and VII	0
March 1	TDEC	Landfill IV Leachate Tank Bypass Inspection	0
March 6	City of Oak Ridge	Semiannual Industrial Pretreatment Compliance Inspection	0
March 19	TDEC	Outfall 200 NPDES Inspection	0
April 3	TDEC	Landfill IV, V, and VII Inspection	0
April 10	TDEC	COLEX Inspection	0
April 24	TDEC	Sanitary Survey of Non-community Water System	0
June 20–21	TDEC	Underground Injection Control Program Compliance Inspection	0
July 17	TDEC	Landfill V and VII Inspection	0
August 1	TDEC	EMWMF Inspection	0
August 28–29	TDEC	Annual RCRA Hazardous Waste Compliance Inspection	1

Table 2.2. Summary of regulatory environmental evaluations, audits, inspections, and assessments conducted at Oak Ridge Reservation in 2018 (continued)

Date	Reviewer	Subject	Issues
September 25	TDEC	Landfill II and IV Clay Cap Inspection	0
September 26–27	TDEC	NPDES Compliance Evaluation Inspection	0
September 5	City of Oak Ridge	Semiannual Industrial Pretreatment Compliance Inspection	0
October 10	TDEC	Landfill IV Clay Cap Inspection	0
October 11	TDEC	Landfill II Inspection	0
October 20	TDEC	Y-12 Landfill Inspections	0
December 7	TDEC	Landfill IV and Area 1 Closure Inspection	0

Acronyms:

CAA = Clean Air Act

CFTF = Carbon Fiber Technology Facility

EMWMF = Environmental Management Waste Management Facility

ETTP = East Tennessee Technology Park

HSWA = Hazardous and Solid Waste Amendments of 1984

NPDES = National Pollutant Discharge Elimination System

ORNL = Oak Ridge National Laboratory

RCRA = Resource Conservation and Recovery Act

SWMU = storm water management unit

TDEC = Tennessee Department of Environment and Conservation

Y-12 Complex = Y-12 National Security Complex

2.3 Reporting of Oak Ridge Reservation Spills and Releases

CERCLA hazardous substances are substances considered to be harmful to human health and the environment. Many are commonly used substances that are harmless in normal uses but can be dangerous when released. CERCLA establishes reportable quantities for hazardous substance releases. Any hazardous substance release exceeding a reportable quantity triggers reports to the National Response Center, the State Emergency Response Center, and community coordinators. Discharges of oil must be reported if they “cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines” (40 *Code of Federal Regulations* 110.3[b]).

ORNL, ETTP, and Y-12 had no reportable releases of extremely hazardous substances, as defined by the Emergency Planning and Community Right-to-know Act, in 2018. See Sections 3.6.4.7, 4.3.11, and 5.3.10 of this report for more information.

2.4 Notices of Violations and Penalties

ETTP: No issues, findings, or violations during fiscal year 2018

ORNL: No issues, findings, or violations during fiscal year 2018

Y-12: Three violations during fiscal year 2018

2.5 Community Involvement

DOE and its contractors provided or supported numerous community involvement activities in 2018 that addressed a range of subjects. These included ETTP historic interpretation efforts, Manhattan Project National Historical Park public meetings and public engagement efforts, Historic American Engineering Record activities, American Museum of Science and Energy community meetings hosted by the City of

Oak Ridge, ETPP airport public meetings, public comment periods for draft environmental assessments, and Community Relations Council meetings.

During 2018, organizations such as Great Smoky Mountains National Park, the East Tennessee Foundation, Girls, Inc., America Recycles Day and Earth Day activities, and local charities benefited from DOE and its contractors' efforts in the community.

2.5.1 Public Comments Solicited

To keep the public informed of comment periods and other matters related to cleanup activities on ORR, DOE publishes online notices at <https://www.energy.gov/orem/services/community-engagement>, conducts public meetings, and issues notices in local newspapers as appropriate. Information regarding environmental policy and DOE's commitment to providing sound environmental stewardship practices and keeping the public informed is available to the public via sponsored forums and public documents, such as this report.

2.5.2 Oak Ridge Site Specific Advisory Board

The Oak Ridge Site Specific Advisory Board (ORSSAB) is a federally appointed citizens' panel that provides independent advice and recommendations to the DOE Oak Ridge Environmental Management Program. The board was formed in 1995 and is composed of up to 22 members chosen to reflect the diversity of genders, races, occupations, views, and interests of persons living near ORR. Members are appointed by DOE and serve on a voluntary basis without compensation.

Information on recommendations the board has made since its establishment, minutes of board and committee meetings, and other information are available on the ORSSAB website at <http://www.energy.gov/ORSSAB>. Videos of the first hour of recent board meetings are posted at <https://www.energy.gov/orem/listings/oak-ridge-site-specific-advisory-board-meetings>. Additional information may be obtained by calling 865-241-4583 or 865-241-4584.

2.5.3 DOE Information Center

The DOE Information Center, located at 1 Science.Gov Way, Oak Ridge, Tennessee, is a one-stop information facility that maintains a collection of more than 40,000 documents describing environmental activities in Oak Ridge. The center is open Monday through Friday from 8 a.m. to 5 p.m. An online catalog that can be used to search for DOE documents by author, title, date, and other fields is available at <https://www.energy.gov/orem/services/community-engagement/doe-information-center>.

2.5.3.1 Telephone Contacts

- Agency for Toxic Substances and Disease Registry: 1-800-232-4636
- DOE Information Center: 865-241-4780; toll free 1-800-382-6938 (option 6)
- DOE Public Affairs Office: 865-576-0885
- EPA Region 4: 1-800-241-1754
- ORSSAB: 865-241-4583, 865-241-4584, 1-800-382-6938 (option 4)
- TDEC, DOE Oversight Division: 865-481-0995

2.5.3.2 Internet Sites

- Agency for Toxic Substances and Disease Registry: <http://www.atsdr.cdc.gov>

- American Recovery and Reinvestment Act: <http://www.energy.gov/recovery-act>
- DOE Main Website: <http://www.energy.gov>
- DOE Information Center: <https://www.energy.gov/orem/services/community-engagement/doe-information-center>
- EPA Region 4: <http://www.epa.gov/region4>
- ETPP: <https://www.energy.gov/orem/cleanup-sites/east-tennessee-technology-park>
- ORNL: <https://www.ornl.gov/>
- ORSSAB: <http://www.energy.gov/ORSSAB>
- TDEC: <https://www.tn.gov/environment/program-areas/rem-remediation/rem-oak-ridge-reservation-clean-up.html>
- Y-12 National Security Complex: <http://www.y12.doe.gov/>

2.6 References

DOE 2019. *2019 Remediation Effectiveness Report for the U.S. Department of Energy Oak Ridge Reservation, Oak Ridge, Tennessee, Data and Evaluations*. DOE/OR/01-2787&D1. US Department of Energy, Oak Ridge, Tennessee, March. (Note that the data reported in the 2019 report were collected prior to or in FY 2018.)

UCOR 2018, *2018 Annual Report to the Oak Ridge Regional Community, Oak Ridge, Tennessee*, OREM-18-2555. UCOR, Oak Ridge, Tennessee.