

2. Compliance Summary and Community Involvement

Environmental standards established by federal and state statutes and regulations including Executive Orders, DOE orders, contract-based standards, and compliance and settlement agreements require conformance by DOE operations on ORR. EPA and 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 discussions with the respective regulatory agencies. The major environmental statutes and their 2017 status for DOE operations on ORR are summarized in the following sections. The DOE Reindustrialization Program has provided several facilities at ETTP and the Oak Ridge Science and Technology Park sites for lease to private entities over the past several years. The compliance status of these lessee operations is not discussed in this report.

Because of different permit reporting requirements and instrument capabilities, various units of measure are used in this report. The list of units of measure and conversion factors provided on pages xxix and xxx is intended to help readers convert numeric values presented in this document as needed for specific calculations and comparisons.

2.1 Laws and Regulations

The principal environmental standards applicable to DOE activities on ORR, the 2017 status, and references to the report sections that provide more detailed information are summarized in Table 2.1.

2.2 External Oversight and Assessments

Inspections of ORR environmental activities conducted by regulatory agencies during 2017 are summarized in Table 2.2. This table does not include internal DOE or DOE contractor assessments, audits, or evaluations.

The Tennessee Oversight Agreement (TOA) allows a program of independent monitoring and oversight of DOE activities on ORR. The TOA is a voluntary agreement between DOE and the State of Tennessee and is designed to assure the citizens of Tennessee that their health, safety, and environment are being protected through existing programs and substantial new commitments by DOE. More information on TOA and reporting of monitoring conducted under TOA is available [here](#).

Table 2.1. Applicable environmental laws and regulations and 2017 status

Regulatory program description	2017 status	Report sections
<p>The Clean Air Act (CAA) and corollary State of Tennessee requirements regulate the release of air pollutants through permits and air quality limits. Emissions of airborne radionuclides are regulated by EPA via National Emission Standards for Hazardous Air Pollutants for radionuclides authorization. Greenhouse gas emissions inventory tracking and reporting are regulated by EPA and DOE internal oversight.</p>	<p>In 2017, all activities on ORR were conducted in accordance with CAA requirements.</p>	<p>3.3.5 4.3.3 5.3.3</p>
<p>The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) provides a regulatory framework for remediation of the release or threat of release of hazardous substances from past practices on ORR.</p>	<p>ORR was placed on the EPA National Priorities List in 1989. The ORR Federal Facility Agreement, initiated in 1992 between EPA, TDEC, and DOE, established the framework and schedule for developing, implementing, and monitoring remedial actions on ORR. The on-site CERCLA Environmental Management Waste Management Facility (EMWMF) is operated by UCOR for DOE. Located in Bear Creek Valley, EMWMF is used for disposal of waste resulting from CERCLA cleanup actions on ORR. EMWMF is an engineered landfill that accepts low-level radioactive, hazardous, asbestos, and polychlorinated biphenyl (PCB) wastes and combinations of the aforementioned wastes in accordance with specific waste acceptance criteria under an agreement with state and federal regulators. No notices of violations were issued for CERCLA-related ORR actions during 2017.</p>	<p>3.3.11 4.3.7 5.3.7 5.3.8 3.3.2</p>
<p>The Clean Water Act (CWA) seeks to protect and improve surface water quality by establishing surface water standards enabled by a system of permits. Wastewater discharges are regulated by National Pollutant Discharge Elimination System (NPDES) permits issued by TDEC.</p>	<p>Discharges to surface water at each of the three major ORR sites are governed by NPDES permits. A compliance rate of greater than 99% was achieved by all three major ORR sites in 2017. One carbonaceous biological oxygen demand event, five ammonia, and three <i>E. coli</i> noncompliances occurred at the ORNL sewage treatment plant in May 2017 due to heavy rains in April 2017. Corrective actions were immediately put in place, and operations were fully restored before the end of July 2017. There was one noncompliance in 2017 when a bathroom and shower facility (K-2527-T) overflowed a storage tank into the secondary containment dike. See Appendix D for more information.</p>	<p>3.3.6 4.3.4 5.3.4 3.3.7</p>

Table 2.1. Applicable environmental laws and regulations and 2017 status (continued)

Regulatory program description	2017 status	Report sections
The Energy Independence and Security Act (EISA) § 438 establishes requirements for federal agencies to reduce storm water runoff from development projects to protect water resources.	To comply with EISA, a variety of storm water management techniques referred to as green infrastructure or low impact design practices have been implemented on ORR. The site sustainability plans and associated reporting provide data on sustainability projects and support EISA § 438 compliance.	4.2.6.3 5.2.1.5
The Emergency Planning and Community Right-to-Know Act (EPCRA) , also referred to as the Superfund Amendments and Reauthorization Act (SARA) Title III, requires reporting emergency planning information, hazardous chemical inventories, and environmental releases of certain toxic chemicals to federal, state, and local authorities.	In 2017 DOE facilities on ORR were operated in accordance with emergency planning and reporting requirements. ETTP had no reportable releases of hazardous substances or extremely hazardous substances, as defined by EPCRA, in 2017.	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 2017 DOE planning and decision-making activities at ETTP and ORNL were conducted via site-level procedures that provide requirements for project reviews and NEPA compliance. At Y-12 environmental evaluations were completed for 48 proposed actions during 2017.	3.3.4 4.3.2 5.3.2
The National Historic Preservation Act (NHPA) 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 2017 activities on ORR were in compliance with NHPA 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 for the presence of wetlands are conducted on a project or program as-needed basis through NEPA and other reviews. Wetland protection on ORR is conducted in accordance with 10 CFR 1022 and EO 11990, <i>Protection of Wetlands</i> . Annual monitoring of remediated wetland sites through 2017 revealed that the wetlands are responding as intended. In 2017 wetlands were delineated in the Copper Ridge Borrow Area and 294 Power Line Area.	1.3.6.1 4.5.8.4 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 2017 status (continued)

Regulatory program description	2017 status	Report sections
The Safe Drinking Water Act (SDWA) 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. In 2017 sampling results for ORNL's water system residual chlorine levels, bacterial constituents, and disinfectant by-products were all within acceptable limits.	3.3.8 4.3.5 5.3.5
The Toxic Substances Control Act (TSCA) regulates the manufacture, use, and distribution of a number of toxic chemicals.	PCB waste generation, transportation, disposal, and storage at ETTP are regulated under EPA ID number TN0890090004. In 2017 ETTP operated five PCB waste storage areas in ETTP generator buildings, and when longer-term storage of PCB and radioactive wastes was necessary, RCRA permitted storage buildings were used. A single PCB waste storage area in Building K-1423 is not part of the RCRA permitted storage buildings. 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 U.S.C. 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. Currently two active bald eagle nests on ORR are protected in accordance with this act. Eaglets were successfully fledged from a Poplar Creek nesting location in 2015.	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 2017 status (continued)

Regulatory program description	2017 status	Report sections
DOE O 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>Oak Ridge Reservation Annual Site Environmental Report for 2017</i> summarizes ORR environmental activities during 2017 and characterizes environmental performance.	All chapters
DOE O 435.1, <i>Change 1, 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 O 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 to ensure compliance with this DOE order.	3.2 4.2 5.2
DOE O 458.1, <i>Radiation Protection of the Public and the Environment</i> , issued in June 2011, canceled DOE O 5400.5 and 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.	In 2017, DOE O 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 O 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 2017 dose to a hypothetically exposed member of the public from all ORR potential exposure pathways combined would be about 0.3 mrem. The 2017 maximum effective dose was about 3% of the limit given in DOE O 458.1. Clearance of property from ORNL, ETTP, and the Y-12 Complex was conducted in accordance with approved procedures that comply with DOE O 458.1. During 2017, there were no unplanned radiological air emission releases from the three major ORR sites.	4.3.13 Chapter 7 4.3.11

Table 2.1. Applicable environmental laws and regulations and 2017 status (continued)

Regulatory program description	2017 status	Report sections
<p>DOE O 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.</p>	<p>DOE O 5400.5 is the primary environmental surveillance radiological applicable, relevant, and appropriate requirement for most CERCLA activities across ORR, and it will remain in force until the individual CERCLA decision documents are reissued or revised to incorporate DOE O 458.1. 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 2017 dose to a hypothetically exposed member of the public from all ORR potential exposure pathways combined would be about 0.3 mrem.</p>	Chapter 7
<p>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.</p>	<p>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.</p>	1.3.6.2
<p>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.</p>	<p>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 2017. Comparing the ETTP fiscal year 2017 total of 17,894 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 .</p>	<p>3.2.4 3.5.1.5 4.2.6.8 5.2.1.4</p>

^aDOE. 2015. *2015 Strategic Sustainability Performance Plan*. US Department of Energy, Washington, DC.

Acronyms:

CAA = Clean Air Act
 CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
 CWA = Clean Water Act
 DOE = US Department of Energy
 EISA = Energy Independence and Security Act
 EMWTF = Environmental Management Waste Management Facility
 EO = executive order
 EPA = US Environmental Protection Agency
 EPCRA = Emergency Planning and Community Right-to-Know Act
 ETTP = East Tennessee Technology Park
 NEPA = National Environmental Policy Act

NHPA = National Historic Preservation Act
 NPDES = National Pollutant Discharge Elimination System
 NRHP = National Register of Historic Places
 ORNL = Oak Ridge National Laboratory
 ORR = Oak Ridge Reservation
 PCB = polychlorinated biphenyl
 RCRA = Resource Conservation and Recovery Act
 SDWA = Safe Drinking Water Act
 TDEC = Tennessee Department of Environment and Conservation
 TSCA = Toxic Substances Control Act
 UCOR = URS | CH2M Oak Ridge LLC
 Y-12 Complex = Y-12 National Security Complex

Table 2.2. Summary of regulatory environmental evaluations, audits, inspections, and assessments conducted at Oak Ridge Reservation, 2017

Date	Reviewer	Subject	Issues
ORNL (including UT-Battelle, LLC; UCOR; Isotek; and NorthWind Solutions, LLC activities)			
January 9	City of Oak Ridge	Carbon Fiber Technology Facility (CFTF) Wastewater Inspection	0
March	TDEC	Inspection of Underground Injection Control Program	0
April 11–12	TDEC	Annual RCRA Inspection for ORNL (including Transuranic Waste Processing Center)	0
May 25–26	TDEC	NPDES Permit Inspection	0
July 27	TDEC	National Transportation Research Center RCRA Inspection	0
September 28	City of Oak Ridge	CFTF Wastewater Inspection	0
October 17	City of Oak Ridge	CFTF Wastewater Inspection	0
October 26–27	TDEC	Annual CAA Inspection for ORNL and CFTF	0
ETTP			
February 27	TDEC	Annual RCRA Compliance Inspection	0
October	City of Oak Ridge	Sewage Manhole Radiologic Inspection	0
November	City of Oak Ridge	Visit to discuss radiologic discharges to the Rarity Ridge Collection System	0
Y-12 Complex			
February 21	City of Oak Ridge	Semiannual Industrial Pretreatment Compliance Inspection	0
April 25, 27	TDEC	Annual CAA Inspection	0
June 20–21	TDEC	Underground Injection Control Program Compliance Inspection	0
July 19-24	TDEC	Annual RCRA Hazardous Waste Compliance Inspection	2
September 26–27	TDEC	NPDES Compliance Evaluation Inspection	0
October 3	City of Oak Ridge	Semiannual Industrial Pretreatment Compliance Inspection	0
November 16, 30	TDEC	Annual CAA Inspection	0
Acronyms:		ORNL = Oak Ridge National Laboratory	
CAA = Clean Air Act		RCRA = Resource Conservation and Recovery Act	
CFTF = Carbon Fiber Technology Facility		TDEC = Tennessee Department of Environment and Conservation	
ETTP = East Tennessee Technology Park		UCOR = URS CH2M Oak Ridge LLC	
Isotek = Isotek Systems LLC		Y-12 Complex = Y-12 National Security Complex	
NPDES = National Pollutant Discharge Elimination System			

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 CFR 110.3[b]).

ORNL, ETPP and Y-12 had no reportable releases of extremely hazardous substances, as defined by EPCRA, in 2017.

See Sections 3.6.4.7, 4.3.11, and 5.3.10 for more information.

2.4 Notices of Violations and Penalties

ETTP: No issues, findings or violations during fiscal year 2017

ORNL: No Issues, findings or violations during fiscal year 2017

Y-12: Two notices of violation during fiscal year 2017

2.5 Community Involvement

Many community involvement activities were provided by or supported by DOE and its contractors in 2017 across a diverse range of subjects and activities. These included ETPP historic interpretation efforts, Manhattan Project National Historical Park public meetings and public engagement, 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 2017 organizations such as Great Smoky Mountains National Park, the East Tennessee Foundation, Girls, Inc., as well as 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 energy.gov/ore/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 www.energy.gov/ORSSAB.

Videos of the first hour of recent board meetings are posted at www.youtube.com/user/ORSSAB.

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 <http://doeic.science.energy.gov>.

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: <http://doeic.science.energy.gov>
- EPA Region 4: <http://www.epa.gov/region4>
- ETTP: <http://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 2017. *2017 Remediation Effectiveness Report for the U.S. Department of Energy Oak Ridge Reservation, Oak Ridge, Tennessee, Data and Evaluations*. DOE/OR/01-2731&D2. US Department of Energy, Oak Ridge, Tennessee.