

## 2. Compliance Summary and Community Involvement

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DOE operations on the ORR are required to be in conformance with environmental standards established by a number of federal and state statutes and regulations, EOs, DOE orders, contract-based standards, and compliance and settlement agreements. Principal among the regulating agencies are EPA and TDEC. These agencies issue permits, review compliance reports, participate in joint monitoring programs, inspect facilities and operations, and oversee compliance with applicable regulations.

When environmental concerns or problems are identified during routine operations or during ongoing self-assessments of compliance status, the issues are discussed with the respective regulatory agencies. The following sections summarize the major environmental statutes and 2015 status for DOE operations on the ORR. Several facilities at ETTP and the Oak Ridge Science and Technology Park sites have been leased to private entities over the past several years through the DOE Reindustrialization Program. 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 xxvi and xxvii is intended to help readers convert numeric values presented in this document as needed for specific calculations and comparisons.

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### 2.1 Laws and Regulations

Table 2.1 summarizes the principal environmental standards applicable to DOE activities on the reservation, the 2015 status, and references to the report sections that provide more detailed information.

### 2.2 External Oversight and Assessments

Inspections of ORR environmental activities conducted by regulatory agencies during 2015 are summarized in Table 2.2. This table does not include internal DOE or DOE contractor assessments, audits, or evaluations.

The State of Tennessee also conducts a program of independent monitoring and oversight of DOE activities on the ORR through the Tennessee Oversight Agreement (TOA). 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 at <http://www.tennessee.gov/environment/topic/rem-oak-ridge-reservation-clean-up>.

Table 2.1. Applicable environmental laws/regulations and 2015 status

Regulatory program description	2015 status	Report sections
<p><b>CAA</b> 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 rad-NESHAPs authorization. Greenhouse gas emissions inventory tracking and reporting are regulated by EPA and DOE internal oversight.</p>	<p>In 2015, all activities on the ORR were conducted in accordance with CAA requirements. One NOV was issued to UT-Battelle, LLC, by TDEC for failure to permit two emergency generators in a timely manner. These two generators were inadvertently omitted from an application submitted previously. The permit for these two generators was issued by TDEC on January 23, 2015.</p>	<p>3.3.5 4.3.3 5.3.3</p>
<p><b>CERCLA</b> provides a regulatory framework for remediation of the release or threat of release of hazardous substances from past practices on the ORR.</p>	<p>The ORR has been on the EPA NPL since 1989. The ORR FFA, initiated in 1992 among EPA, TDEC, and DOE, establishes the framework and schedule for developing, implementing, and monitoring remedial actions on the 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 the ORR, including ORNL. EMWMF is an engineered landfill that accepts low-level radioactive, hazardous, asbestos, and PCB wastes and combinations of the aforementioned wastes in accordance with specific waste acceptance criteria under an agreement with state and federal regulators.</p>	<p>3.3.11 4.3.7 5.3.8</p>
<p><b>CWA</b> seeks to protect and improve surface water quality by establishing surface water standards enabled by a system of permits. Wastewater discharges are regulated by NPDES permits issued by TDEC.</p>	<p>No NOV's were issued for CERCLA-related ORR actions during 2015.</p>	<p>3.3.6 4.3.4 5.3.4</p>
<p><b>EISA</b> § 438 establishes requirements for federal agencies to reduce storm water runoff from development projects to protect water resources.</p>	<p>To comply with EISA, a variety of storm water management techniques referred to as GI or LID practices have been implemented on the ORR. The site sustainability plans and associated reporting provide data on sustainability projects and support EISA § 438 compliance.</p>	<p>4.2.6.8 5.2.1.4.2</p>
<p><b>EPCRA</b>, also referred to as SARA Title III, requires reporting emergency planning information, hazardous chemical inventories, and environmental releases of certain toxic chemicals to federal, state, and local authorities.</p>	<p>In 2015, DOE facilities on the ORR were operated in accordance with emergency planning and reporting requirements.</p>	<p>3.3.14 4.3.9 5.3.10</p>

Table 2.1. Applicable environmental laws/regulations and 2015 status (Continued)

Regulatory program description	2015 status	Report sections
<b>NEPA</b> 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 2015, DOE planning and decision making activities on the ORR were conducted in accordance with NEPA requirements.	3.3.4 4.3.2 5.3.2
<b>NHPA</b> provides protection for the nation's historic resources by establishing a comprehensive national historic preservation policy.	The ORR has several facilities eligible for inclusion in the NRHP. Proposed activities are reviewed to determine potential adverse effects on these properties, and methods to avoid or minimize harm are identified. During 2015, activities on the ORR were in compliance with NHPA requirements.	3.3.4 4.3.2 5.3.2
<b>ORR Protection of Wetlands Programs</b> 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 the ORR is conducted in accordance with 10 CFR 1022 and EO 11990, <i>Protection of Wetlands</i> .	1.3.6.1 4.2.6.1 5.3.12
<b>RCRA</b> governs the generation, storage, handling, and disposal of hazardous wastes. RCRA also regulates USTs containing petroleum and hazardous substances, universal waste, and recyclable used oil.	The Y-12 Complex, 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 the ORR.	3.3.9 4.3.6 5.3.6
<b>SDWA</b> establishes minimum drinking water standards and monitoring requirements.	The City of Oak Ridge supplies potable water to the facilities on the ORR and is responsible for meeting all regulatory requirements for drinking water. In 2015, sampling results for ORNL's water system residual chlorine levels, lead and copper levels, bacterial constituents, and disinfectant by-products were all within acceptable limits.	3.3.8 4.3.5 5.3.5
<b>TSCA</b> regulates the manufacture, use, and distribution of a number of toxic chemicals.	In 2015, UT-Battelle operated 16 PCB waste storage areas in generator buildings. ORR facilities manage TSCA-regulated materials, including PCBs. The ORR PCB FFCA between EPA and DOE continues to provide a mechanism to address legacy PCB-use issues across the ORR. The agreement specifically addresses the unauthorized use of PCBs, storage and disposal of PCB waste, PCB spill cleanup and/or decontamination, PCBs mixed with radioactive materials, PCB research and development, and records and reporting requirements for the ORR. EPA is updated annually on the status of DOE actions with regard to management and disposition of legacy PCBs covered under the ORR PCB FFCA. One unauthorized use of PCBs was discovered and reported in pipe-coating material in the 7900 area.	3.3.13 4.3.8 5.3.9

Table 2.1. Applicable environmental laws/regulations and 2015 status (Continued)

Regulatory program description	2015 status	Report sections
<b>Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d)</b> 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 the ORR year-round. Currently there are two active bald eagle nests on the ORR that are protected in accordance with this act. Eaglets were successfully fledged from a Poplar Creek nesting location in 2015.	1.3.6.2
<b>Endangered Species Act</b> prohibits activities that would jeopardize the continued existence of an endangered or threatened species or cause adverse modification to a critical habitat.	The ORR is host to several plant and animal species that are categorized as endangered, threatened, or of special concern and that are protected in accordance with this act.	1.3.6.2
<b>Migratory Bird Treaty Act</b> 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.	The ORR hosts numerous migratory birds that are protected under this act.	1.3.6.2
<b>DOE O 231.1B, Environment, Safety and Health Reporting</b> , 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 2015</i> summarizes ORR environmental activities during 2015 and characterizes environmental performance.	All chapters
<b>DOE O 435.1, Change 1, Radioactive Waste Management</b> , 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 the ORR to ensure compliance with this DOE order.	
<b>DOE O 436.1, Department Sustainability</b> , 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 the ORR have developed SSPs and have implemented EMSs that are incorporated with the contractors' ISMSs to promote sound stewardship practices and to ensure compliance with this DOE order.	3.2 4.2 5.2

Table 2.1. Applicable environmental laws/regulations and 2015 status (Continued)

Regulatory program description	2015 status	Report sections
<b>DOE O 458.1, <i>Radiation Protection of the Public and the Environment</i></b> , 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 2015, DOE O 458.1 was the primary contractual obligation for radiation protection programs for UT-Battelle, LLC and CNS, 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 2015 dose to a hypothetically exposed member of the public from all ORR potential exposure pathways combined would be about 3 mrem. The 2015 maximum ED was about 3% of the limit given in DOE O 458.1.	4.3.13 4.3.13 Chap. 7
	Clearance of property from ORNL, ETPP and the Y-12 Complex was conducted in accordance with approved procedures that comply with DOE O 458.1.	
<b>DOE O 5400.5, <i>Radiation Protection</i></b> , 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 O 5400.5 is the primary environmental surveillance radiological ARAR for most CERCLA activities across the ORR and 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 2015 dose to a hypothetically exposed member of the public from all ORR potential exposure pathways combined would be about 3 mrem.	Chap. 7
<b>EO 13186, <i>Responsibilities of Federal Agencies to Protect Migratory Birds</i></b> , identifies the responsibilities of federal agencies to promote the conservation of migratory bird populations.	An MOU was entered into by DOE and FWS that meets the requirements under Section 3 of EO 13186. The ORR hosts numerous migratory birds that are present either seasonally or year-round. This MOU, which was updated in September 2013, strengthens migratory bird conservation on the ORR through enhanced collaboration between DOE and FWS.	1.3.6.2
<b>EO 13693, <i>Executive Order -- Planning for Federal Sustainability in the Next Decade</i></b> , 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.	In 2015, EO 13693, Planning for Federal Sustainability in the Next Decade, superseded EO 13514 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. ORR activities complied with the planning and reporting requirements of these executive orders in 2015.	3.2.4 4.2.3.4 5.2.1.4

<sup>a</sup>DOE. 2015. *2015 Strategic Sustainability Performance Plan*. US Department of Energy, Washington, DC.

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**Table 2.1. Applicable environmental laws/regulations and 2015 status (Continued)**


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**Acronyms**

ARAR = applicable, relevant, and appropriate requirement  
 CAA = Clean Air Act  
 CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act  
 CNS = Consolidated Nuclear Security, LLC  
 CWA = Clean Water Act  
 DOE = US Department of Energy  
 EISA = Energy Independence and Security Act  
 EMS = environmental management system  
 EMWMF = Environmental Management Waste Management Facility  
 EO = executive order  
 EPA = US Environmental Protection Agency  
 EPCRA = Emergency Planning and Community Right-to-Know Act  
 ETPP = East Tennessee Technology Park  
 FFA = Federal Facility Agreement  
 FFCA = Federal Facilities Compliance Agreement  
 FWS = US Fish and Wildlife Service  
 GI = green infrastructure  
 ISMS = integrated safety management system  
 LID = low impact development  
 MOU = memorandum of understanding  
 NEPA = National Environmental Policy Act

NESHAPs = National Emission Standards for Hazardous Air Pollutants  
 NHPA = National Historic Preservation Act  
 NOV = notice of violation  
 NPDES = National Pollutant Discharge Elimination System  
 NPL = National Priorities List  
 NRHP = National Register of Historic Places  
 ORNL = Oak Ridge National Laboratory  
 ORR = Oak Ridge Reservation  
 PCB = polychlorinated biphenyl  
 rad-NESHAPs = National Emission Standards for Hazardous Air Pollutants for radionuclides  
 RCRA = Resource Conservation and Recovery Act  
 SARA = Superfund Amendments and Reauthorization Act  
 SDWA = Safe Drinking Water Act  
 SSP = site sustainability plan  
 STP = sewage treatment plant  
 TDEC = Tennessee Department of Environment and Conservation  
 TSCA = Toxic Substances Control Act  
 UCOR = URS | CH2M Oak Ridge LLC  
 UST = underground storage tank  
 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, 2015**

Date	Reviewer	Subject	Issues
<b>ORNL</b> (including UT-Battelle, LLC; UCOR; Isotek; and WAI activities)			
January 14	TDEC	Annual CAA Inspection for ORNL and CFTF	0
February 19	City of Oak Ridge	CFTF Wastewater Inspection	0
April 27–29	TDEC	Annual RCRA Inspection for ORNL (including TWPC)	1
April 29	1916-T2 Warehouse	1916-T2 Warehouse RCRA Inspection	0
August 3	City of Oak Ridge	CFTF Wastewater Inspection	0
October 21–22	TDEC	Annual CAA Inspection for ORNL and CFTF	0
October 28–29	City of Oak Ridge	CFTF Wastewater Inspection	0
<b>ETTP</b>			
March 9	TDEC	Annual RCRA Compliance Inspection	1
June 2	TDEC	RCRA TNHW-117 Permit Renewal	0
June 24	TDEC	D&D Waste Shipment Audit	0
June 15	TDEC	TDEC NPDES Permit Writer	0
September 24 and 28	TDEC	NPDES Compliance Evaluation Inspection	0
<b>Y-12 Complex</b>			
February 12	COR	Semiannual Industrial Pretreatment Compliance Inspection	0
March 9–10	TDEC	Annual CAA Inspection	0
September 16	COR	Semiannual Industrial Pretreatment Compliance Inspection	0
November 17–19	TDEC	Annual CAA Inspection	0

**Acronyms:**

CAA = Clean Air Act	RCRA = Resource Conservation and Recovery Act
CFTF = Carbon Fiber Technology Facility	TDEC = Tennessee Department of Environment and Conservation
COR = City of Oak Ridge	TNHW = Tennessee Hazardous Waste Permit
D&D = decontamination and decommissioning	TWPC = Transuranic Waste Processing Center
ETTP = East Tennessee Technology Park	UCOR = URS   CH2M Oak Ridge LLC
Isotek = Isotek Systems LLC	WAI = Wastren Advantage, Inc.
NPDES = National Pollutant Discharge Elimination System	Y-12 Complex = Y-12 National Security Complex
ORNL = Oak Ridge National Laboratory	

## 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 (RQ) for hazardous substance releases. Any hazardous substance release exceeding an RQ 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]).

The Y-12 Complex had one unplanned release of a hazardous substance which required notification of the regulatory agencies. On June 9, 2015 during the demolition of Building 9808, 2,117 pounds of mercury and mercury-containing sludge were spilled, which exceeded a hazardous substance reportable quantity. This event was reported to the appropriate agencies in accordance with regulatory requirements. See Section 4.3.11 for more information.

## 2.4 Notices of Violations and Penalties

ETTP received one environmental violation in 2015. This violation occurred at ETTP during a routine inspection for a missing used oil drum label on a drum in the facility's garage. The condition was immediately corrected and documented in UCOR's QAS tracking system. No penalties were assessed in 2015.

Although a notice of violation was issued by TDEC on August 5, 2015 for a drinking water monitoring deficiency, the Y-12 Plant Water System retains the state's "Approved" designation.

A notice of violation (NOV) issued to UT-Battelle by TDEC was received on January 20, 2015 for failure to include two emergency generators in a timely manner in the ORNL site air permit. This was self-reported to TDEC on November 11, 2014 and the omission has since been corrected. The two generators are now included in a permit issued January 23, 2015.

No other environmental NOVs, penalties, or consent orders were issued on the reservation during 2015.

## 2.5 Community Involvement

Many community involvement activities were provided by and/or supported by the DOE and its contractors in 2015 across a diverse range of subjects and activities. These included, but were not limited to, ETTP historic interpretation efforts, Manhattan Project National Historical Park public meetings and engagement, American Museum of Science and Energy community meetings hosted by the City of Oak Ridge, ETTP airport public meetings, public comment periods for draft environmental assessments, and Community Relations Council meetings. During 2015 organizations such as Great Smoky Mountains National Park, the East Tennessee Foundation, Oak Ridge Associated Universities Science Bowl, America Recycles Day activities, and local charities benefited from DOE and its contractors' efforts.

### 2.5.1 Public Comments Solicited

To keep the public informed of comment periods and other matters related to cleanup activities on the ORR, DOE publishes online notices (<http://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 (EM) Program. The board was formed in 1995 and is composed of up to 22 members chosen to reflect the diversity of gender, race, occupation, views, and interests of persons living near the DOE 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 on YouTube at <http://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, 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
- DOE ORO Public Information Line: 1-800-382-6938
- 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>
- ETPP: <http://www.ettpreuse.com/default.htm>
- ORNL: <https://www.ornl.gov/>
- ORSSAB: <http://www.energy.gov/ORSSAB>
- TDEC: <http://www.tennessee.gov/environment/>
- TDEC, DOE Oversight Division: <http://www.tn.gov/environment/section/rem-remediation/energy-oversight.shtml>
- Y-12 National Security Complex: <http://www.y12.doe.gov/>

## 2.6 References

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

