

**LA-UR-17-31115**

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Title: Environmental Awareness, Course 32461

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Intended for: Training

Issued: 2017-12-08

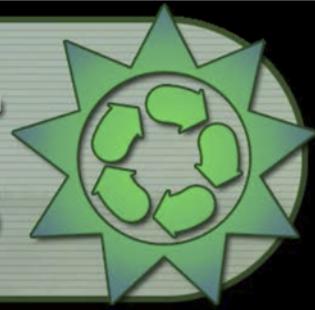
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# Environmental Awareness

Course 32461



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## Introduction

### Overview

Los Alamos National Laboratory (LANL or the Laboratory) is committed to an environmental management strategy aimed at reducing the Laboratory's environmental impacts, while still maintaining or increasing operating efficiencies. This training is designed to help you understand the critical importance of environmental management to the continuing success of the Laboratory and your personal role in this essential endeavor. If you are new to this training, you may wish to explore the various links that will take you to more in-depth information.

A [PDF version](#) of this course is available for offline reading.

### Course Objectives

Upon completion of this training, you will understand your personal role in supporting and sustaining the Laboratory's environmental management system.

You will

- understand the Laboratory's Environmental Governing Policy, the current environmental objectives, and the role that the Environmental Management System (EMS) plays in maintaining LANL environmental performance;
- know the basic components, functions, and responsibilities of the Laboratory's EMS;
- understand the significant environmental impacts, actual or potential, of your work activities and the environmental benefits of improved personal performance;
- understand the importance of complying with environmental policy and procedures and the Laboratory's legal environmental requirements;
- know your roles and responsibilities in achieving conformance with the environmental policy, procedures, and requirements, including emergency preparedness and response and waste minimization requirements;
- understand the Laboratory's commitment to continual improvement in environmental management and to pollution prevention; and
- Be able to locate the Laboratory's Environmental website, as well as any tools and resources you need to do your job in an environmentally responsible way.

### Using This Course

This course features some dynamic components, as well as many optional keyboard commands. Pressing the **M** key will toggle the display of the Contents for this course, as will clicking on the **Contents** handle on the left.

Use the **buttons** that appear at the bottom right to move forward and backward through this course. You can also use the **Left** and **Right Cursor Keys** to navigate.

You can adjust the **font size** using the controls on the lower left side of the page. You can also use the **1** through **5** keys on your keyboard, where **1** is **extra small** and **5** is **extra large**. Your font size preference will be remembered for up to a year (less if you delete your web browser's cookies).

## Our Environmental Governing Policy

The Laboratory has 12 governing policies for executing work, accomplishing mission, and providing management and oversight. The Governing Policy on the Environment ensures that all work is performed in a way that protects the environment. That policy states: "We are committed to act as stewards of our environment to achieve our mission in accordance with all applicable environmental requirements. We set continual improvement objectives and targets, measure and document our progress, and share our results with our workforce, sponsors, and public. We reduce our environmental risk through legacy cleanup, pollution prevention, and long-term sustainability programs." To honor that commitment, the Laboratory expects its workforce to be responsible stewards of the environment, comply with environmental laws and regulations, prevent pollution, and reduce the impact of their work on the environment. To help support our workforce, the Laboratory maintains the EMS.

# What Is an Environmental Management System (EMS)?

The EMS is a set of resources, processes, and practices that enable an organization to manage its environmental requirements, reduce its environmental impacts, and increase its operating efficiency. The Laboratory's EMS

- includes a network of Laboratory environmental professionals, organizations, resources, and tools to manage our environmental performance;
- is part of integrated safety and work management (ISM);
- helps Laboratory organizations identify and manage the environmental aspects of their programmatic and operational work activities;
- provides order and consistency for addressing environmental concerns while focusing on continual process improvement;
- is described in the institutional Policy 400-series documents and on the Environmental Website; and
- ensures LANL implementation of environmental specifications included in the LANS contract and meets DOE requirements for compliance with ISO 14001:2015 “Environmental Management Systems.”

## What Does Our EMS Do for the Laboratory?

By using and certifying to the ISO 14001 “Environmental Management Systems” standard, LANL ensures quality-based and fully compliant performance of our work. The system helps managers and workers be cognizant of the environmental aspects of their work, identify and control workplace environmental risks, and prioritize and perform environmentally driven improvements.

## How Does Our Work Impact the Environment?

Cleaning up the environmental consequences of historical operations at the Laboratory has been ongoing for many years, and we have learned much from our past. Existing operations have been reviewed in the Site-Wide Environmental Impact Statement as part of the requirements of the National Environmental Policy Act (NEPA). Today, managing current and future work to minimize environmental consequences is critically important. All work performed at LANL must be evaluated for any potential environmental risks, and these risks must be managed. Your work can be evaluated for environmental risk in many ways, such as the Integrated Review Tool (IRT) [which includes the Permits and Requirements Identification (PRID) tool], Excavation/Fill/Soil Disturbance Permit Request System (EXID) and siting review processes, directorate EMS risk analysis process, and Work Management System. LANL has identified 22 core environmental aspects that potentially impact work performed on site that include

- air emissions
- interaction with surface water and storm water
- discharge to wastewater systems
- interaction with drinking water supplies/systems or groundwater
- work within or near floodplains and wetlands
- interaction with wildlife and/or habitat

- biological hazards
- interaction with soil resources
- spark or flame producing conditions
- cultural/historical resource disturbances
- visual resources
- hazardous or radioactive material and waste packaging and transportation
- radioactive waste generation and management
- hazardous or mixed-waste generation and management
- solid or sanitary waste generation & management
- interaction with contaminated sites
- chemical (industrial and laboratory) use and storage
- radioactive material use and storage
- surplus properties and material management
- resource use and conservation
- storage of materials in tanks
- engineered nanomaterials

The Laboratory's environmental obligations span a wide spectrum of topics. Click on a topic to learn how your work can affect a resource.

## Water Resources

Water is probably New Mexico's most valuable natural resource. The Laboratory is legally required (by the Clean Water Act and the New Mexico Water Quality Act) and ethically committed to protecting that resource. Various types of work at the Laboratory can negatively impact New Mexico's water resources, including

- spills and leaks of potential pollutants and hazardous wastes (oil, gasoline, hydraulic fluid, cleaning solutions, acids, paint, etc.)
- work that generates, discharges, or disposes of storm water, wastewater, or non-wastewater (uncontaminated industrial water, fire-suppression water, or potable water)
- activities that modify wastewater stream contaminant profiles, volumes, or discharge locations
- soil disturbances, excavations, fill operations, industrial processing activities or other operations that come in contact with storm water or that impact or have the potential to impact the quality of surface water, or storm water runoff, or groundwater by creating situations that could cause the transport of pollutants directly into nearby water courses, arroyos, or storm sewer systems
- installations or modifications of aboveground liquid storage tanks, septic tanks, and holding tank systems
- inefficient use of potable water in water-intensive processes (cooling towers, hydrant flushing, and landscaping)

## Air Resources

Although residents of northern New Mexico have been fortunate historically to have some of the cleanest air in the United States, the effects of forest fires, vehicle emissions, and industrial pollutants can change that. The Laboratory is legally required (under the Clean Air Act) and ethically committed to protecting the air we breathe. The Department of Energy (DOE) also expects

the Laboratory to track and reduce greenhouse gas emissions. Some of the Laboratory's day-to-day activities that require air quality monitoring, and sometimes even permitting, include

- asbestos abatement, removal, and disposal operations
- asphalt plant operations
- operations that might produce beryllium air emissions
- fuel-fired boilers and heaters
- chemical use emissions
- the operation of data disintegrators (for destruction of paper);
- the use of degreasers
- portable and stationary standby (emergency) power generators
- operations that might produce halon emissions
- power plant operations
- operations that might produce radioactive air emissions
- operations involving the use, storage or disposal of refrigerants
- construction activities
- demolition activities
- remediation and legacy cleanup activities

## **Archaeological Resources**

Archaeological resources are prehistoric and historic places that are part of our Nation's history and/or have special meaning to the Laboratory's Pueblo neighbors, stakeholders, and the public. More than 1800 archaeological resources are situated on LANL lands. These sites date to as far back as 7500 years ago and more recently through the Homestead, Manhattan Project, and Cold War eras. The Laboratory is legally required by federal legislation and ethically committed as stewards of the prehistory of the Pajarito Plateau, as well as New Mexico's past, to protect these nonrenewable, rare, and sometimes sacred resources. Various types of work at the Laboratory can negatively impact these resources, including

- walking or climbing in or around archaeological sites and historic structures
- removing archaeological materials (pottery shards and projectile points) from sites
- excavating soil or moving rock on laboratory property without permits
- maintaining utility lines
- removing ground cover vegetation
- thinning trees
- working with heavy machinery or driving off-road
- cutting or removing standing dead trees

## **Historic Properties**

Historic properties are buildings, structures, and other spaces and places that have significant historical meaning to Laboratory workers, scholars, and the general public. The Laboratory is home to more than 400 historic properties, mostly from the World War II and Cold War eras. Some of these World War II-era resources recently have been identified by the National Park Service as potential National Historic Landmarks and have been included in the newly established Manhattan Project National Historical Park.

The Laboratory is legally required by federal legislation and ethically committed as stewards of the past to protect these resources. Various types of work at the Laboratory can negatively impact these resources, including

- work that modifies the interior or exterior of a historic building or structure
- work that alters the appearance of an historic building (its wall color, roof style, window style, surface finish, etc.)
- work that alters the physical or environmental surroundings of a historic building (making major changes in drainage, access, landscaping, or supporting buildings)
- work that removes portions or adds to the building
- removing or altering the overall configuration of major installed process or research equipment (does not apply to small portable equipment or expendable supplies)

## **Biological Resources**

Protected biological resources include federally listed threatened and endangered plant and animal species regulated under the Endangered Species Act, federally protected migratory birds regulated under the Migratory Bird Treaty Act, state listed threatened and endangered species regulated under the New Mexico Wildlife Conservation Act, and floodplains and wetlands regulated under DOE orders in 10 CFR 1022.

The Laboratory is legally required by federal legislation and ethically committed as stewards of the environment to protect these resources. Various types of work at the Laboratory can negatively impact these resources, including

- walking, climbing, or driving off-road in sensitive habitat areas
- excavating soil or moving rock
- Maintaining utility lines
- removing vegetation during bird nesting seasons
- working with vehicles or heavy machinery in habitat areas
- working in ponded areas or intact wetlands
- cutting or removing live or standing dead trees during the summer months
- disturbing bird's nests or bird boxes on Laboratory property

## **Waste**

Waste and waste management practices, and the pollution prevention opportunities they offer, are important considerations in scoping Laboratory work. As with the natural and cultural resources the Laboratory must protect, the production, prevention, and disposal of waste is a state- and federally legislated activity. Because of the broad range of activities that the Laboratory supports, a broad range of waste is often produced. Some of this waste is extremely hazardous and requires special handling. Other waste is not hazardous or difficult to dispose of but might be mostly avoided with better work planning.

Waste management is also an expensive overhead cost for the Laboratory, so pollution prevention opportunities are often also cost-savings opportunities. Various types of work at the Laboratory can significantly impact the Laboratory's waste stream and waste management system, including

- work that requires or allows the disposal of recyclable materials (metals, oils, coolants, paper/cardboard) in the trash
- work that produces construction and demolition waste
- work that produces unusual or excessive batteries or electronics waste

- work situations that allow packaging or other similar materials to be blown away in the wind or carried away by storm water
- work that generates or processes waste (note that specific rules dictate how waste may be processed or treated at LANL and requirements are dependent on the facility, waste type, and point at which the waste processing or treatment may occur in the “life” of the waste)

Recent events at the Waste Isolation Pilot Plant (WIPP) involving LANL waste emphasize why understanding how waste should be managed is critical.

**Let's look at an example:**

A LANL facility is sorting and segregating drums of legacy solidified sludge. Upon opening one of the drums, liquid is present among the solidified waste in the bottom of the drum. This condition must be recognized as a hold point, and steps must be taken.

**Why?**

The “sort/segregation process owner” is about to become the “Generator” of a new waste stream.

**Still not sure why?**

The waste stream that the operator was expecting to see was NOT what was present in the drum.

**Similar waste streams?**

Yes, they are similar; however, the details matter.

The collected liquids must be characterized (e.g., analyzed) and a compatibility evaluation performed and documented before an absorbent is purchased and used to absorb the collected liquids placed into the daughter drum.

The operator must

1. PAUSE operations.
2. Safely close and stage the container.
3. Contact the assigned waste management coordinator (WMC) to initiate an analysis request for the liquids.
4. Create a new waste stream profile in the Waste Compliance And Tracking System (WCATS).
5. Arrange to have liquids sampled and characterized.
6. Perform a compatibility evaluation (through the WMC) once characterization data are available.
7. Document the compatibility evaluation results in WCATS before the absorbent is purchased and used to absorb the collected liquids placed into the daughter drum.

This entire process must be tracked in the work documents. Work must be authorized before proceeding.

**Following these steps allows the work to be done without a Hazardous Waste Facility (HWF) Permit modification (which can take years to obtain) and meets the LANL HWF Permit absorption exemption.**

Resources are available to help. Contact the WMC and/or Environmental Compliance Programs (EPC-CP) staff for assistance.

## Energy Resources

Energy resources are sources of energy-producing substances that can be renewable (sun, sea, or wind) or nonrenewable (a coal mine, gas well, or oil well). The DOE's National Nuclear Security Administration (NNSA) and LANL procure and manage the energy resources required to support the energy-intense mission of the Laboratory. To secure future mission work, replace aging infrastructure, and meet a growing electricity demand, new generation sources are necessary to provide energy at a competitive price and meet DOE's greenhouse gas emissions reduction goal of 50% [compared with fiscal-year (FY) 2008] by FY 2025.

LANL purchases electrical energy from several sources, including run-of-the-river hydroelectric plants, coal-fired plants, and a small photovoltaic array. In the future, LANL plans to invest in a combined heat and power plant in the TA-3 area, onsite photovoltaics, and power purchase agreements for imported wind energy. We are also reducing energy use by upgrading aging mechanical systems and installing building automation systems to monitor and manage facilities efficiently. LANL is committed to a diverse energy strategy for economic and operational flexibility, and we evaluate current and future energy resource decisions to balance cost, risk, known market conditions, and environmental and operational goals.

Various types of work at the Laboratory can negatively impact energy resources, including

- operating facilities without a night set-back mode (facilities can reduce energy use by up to 30% by implementing unoccupied operating hours in the Building Automation System or establishing operating schedules in a simple programmable thermostat);
- upgrading to facilities that do not take advantage of the most energy efficient equipment available;
- deferring maintenance in facilities (broken equipment can cause energy use to increase because the system is not operating as intended in peak efficiency mode);
- producing new or modified work without a life cycle cost analysis to ensure consideration of associated energy costs.

## Challenges

Environmental stewardship is part of every activity at LANL. Requirements and work environments change constantly. Adapting to changes and adding environmentally protective steps to our work activities are important. Special areas of focus for LANL currently include

1. reducing spills and unplanned releases:

The Laboratory has a standing goal to reduce the frequency and severity of unplanned releases to the environment each year. Spills lead to lost work time, additional waste disposal costs, and increased environmental liability for the Laboratory. Please do your part to help prevent spills of all types and quantities at the Laboratory. Notify EPC-CP (Spills Pager: 664-7722) of all unplanned releases to ensure that timely documentation, corrective actions, and regulatory reporting (if required) are completed. If the release is an emergency, contact Emergency Operations (667-6211).

2. reviewing work for cultural resource impacts:

The Laboratory has a substantial federally protected archaeological footprint, and it is extremely important that outdoor work be reviewed for associations with cultural areas before work activities are performed. Use the LANL IRT to obtain a review.

3. cleaning it up:

It can be easy to accumulate items that are no longer in use. Materials left in storage without oversight or ownership can become collections of unknown items, sometimes unmarked and unlabeled, and can create new hazards and waste disposal challenges for those who must eventually attend to them. The [Institutional Site Cleanup Program](#) is available to help. If you have areas that need to be cleaned up, get it done.

4. preventing mixed waste:

Waste regulated under the Environmental Protection Agency (EPA) for its hazardous constituents and DOE for its radioactive constituents is called mixed waste. Because of its dual regulation, mixed waste is very costly to manage and dispose of. You can prevent the generation of mixed waste by limiting the use of regulated materials in areas posted for radiological hazards, including radiological controlled areas, radiological buffer zones, radioactive material areas, and soil contamination areas.

5. maintaining energy supply and achieving greenhouse gas reduction goals:

To secure future mission work, replace aging infrastructure, and meet a growing electricity demand, LANL is seeking new energy sources at a competitive price that will also support low carbon emissions. You can reduce energy demand in your operation by ensuring that investments in infrastructure or equipment are energy efficient and well maintained over time.

## Institutional Objectives and Targets

Every year, the Laboratory reviews its environmental risk and commits to specific environmental objectives. Directorates develop environmental action plans (EAPs) to mitigate identified risks and help the Laboratory meet its objectives, track progress toward actions identified in EAPs, and document changes in identified risk. The Laboratory is currently committed to three broad objectives at the institutional level:

### Clean the Past

This objective involves reducing the environmental risk from historical operations, legacy wastes, and excess materials and from other conditions associated with activities no longer part of current operations. FY 2018 has six targets for this area:

- Continue to comply with the requirements of the Compliance Order on Consent with NMED\*
- Continue implementation of remediation activities for the chromium plume in groundwater beneath Sandia and Mortandad canyons\*
- Continue to implement the institutional Facility Footprint Reduction Plan
- Continue to dispose of equipment, materials, and metals no longer in use

- Execute remediation of nitrate salt waste\*
- Manage interfaces with new environmental management contractor

\*Implemented by Los Alamos National Security (LANS) via the DOE-Environmental Management (EM) Bridge Contract

## Control the Present

This objective involves reducing the environmental risk from the current, ongoing operations mission and work scope. FY 2018 has seven targets for this area:

- Implement tasks from enduring mission waste management strategy as prioritized by managers
- Improve the site cleanout and workplace stewardship program
- Establish a more cost-effective and sustainable method for disposing of difficult waste
- Implement the supplemental environmental projects (SEPs) associated with the WIPP Settlement Agreement
- Implement pollution prevention and federal sustainability requirements, including the LANL Site Sustainability Plan (SSP)
- Implement and maintain integrated site planning and engage ESH early in the planning process
- Facilitate selection of DOE-approved sustainable products by increasing awareness and modifying ordering systems

## Create a Sustainable Future

This objective involves reducing the environmental risk from customer expectations and regulatory requirements associated with future conditions, as well as managing these in alignment with short- and long-term planning, and becoming prepared for the projected operations and work scope. For 2018, three targets are listed for this area:

- Analyze the processes, and develop a plan to incentivize line management to avoid generating wastes while continuing correct waste disposal
- Develop a path forward to meet energy sustainability goals
- Develop environmentally sustainable solutions that improve energy, water, air soil, radioactive material or waste management, chemical or material use

## Who's Watching Us?

In addition to monitoring by our environmental regulators (for example, the Environmental Protection Agency, the State Historic Preservation Office, and the New Mexico Environment Department) and the Department of Energy, the Laboratory's environmental impacts are closely monitored by its surrounding northern New Mexico communities, city and county governments, pueblos, park and forest agencies, and members of the general public.

To help manage this interest, the Laboratory maintains an extensive environmental presence on the external website and provides environmental documents through the Electronic Public Reading Room and in hard-copy form at the LANL Public Reading Room (located at 94 Cities of Gold Road in Pojoaque, NM). An electronic e-mail subscription service for environmental updates on a regular basis is available to anyone on or off site and can be subscribed to from the external website.

The Laboratory also makes its environmental data, along with data from the New Mexico Environment Department (NMED) DOE Oversight Bureau, accessible to the public via the Intellus online data tool.

## Your Environmental Responsibilities

As a LANL worker, you play an important role in helping the Laboratory meet its environmental stewardship goals and responsibilities. Failure to protect the environment may cause harm to the environment, fines or other legal actions against the laboratory, and/or result in disciplinary action. To fulfill this important role, you should

- regularly review and always adhere to the Laboratory's Governing Environmental Policy
- learn how your work affects the environment and impacts the Laboratory's environmental performance
- know the controls in place for mitigating the environmental impacts of your work, and maintain the necessary training and qualifications for implementing those controls correctly
- use the IRT to complete EXIDs for your projects early in the planning process because environmental review and permitting [e.g., the National Environmental Policy Act (NEPA) and air quality permits] can have long lead times
- include environmental risks in your work processes and raise concerns when you have them
- know your environmental responsibilities, even in emergency situations. In an emergency situation, you should
  - call 911 for police, ambulance, or fire department; and follow it with a call to Emergency Operations at 667-6211
  - for all other incidents, call the Security and Emergency Operations division office (SEO-DO) at 667-6211
  - if you have or see a spill, notify EPC-CP at 664-7722 (spills pager) and report it to your supervisor—note that SEO-DO should also be contacted for all emergencies;
  - complete initial and periodic emergency management and corrective actions training as required
  - follow any integrated work document (IWD), building emergency plan (BEP), and other process and operations and facility-specific emergency procedures for the handling of materials or wastes
- review your specific organization's environmental documentation, which includes your directorate's environmental charter, risk assessment documentation, and annual environmental action plan, to understand the risks, controls, and commitments made by your directorate
- identify and implement positive, proactive, environmentally sound behaviors in your daily work

- be aware that the Laboratory undergoes frequent environmental audits and assessments and that auditors are free to interview any LANL worker to determine if you
  - understand the environmental impact(s) of your work
  - have the appropriate job-specific environmental training and work to approved procedures to control environmental impacts
  - are aware of the Laboratory's Environmental Governing Policy and where to find it
  - know where to access LANL information about the environment,
  - have taken this online Environmental Awareness Training
- communicate with your EMS point of contact (POC)
- request that LANL's Pollution Prevention team conduct a review of your work processes to minimize the generation of mixed, hazardous, and radioactive wastes

## Managerial Responsibilities

As a manager, you have additional roles in helping your workers and the Laboratory meet their environmental goals. You should

- encourage and support successful environmental management at LANL, including the work of the Environmental Senior Management Steering Committee, your EMS POC, and your directorate's environmental working group
- implement the Laboratory's EMS, as described in SD400 and the Policy 400-series, and ensure that all work you oversee is evaluated for environmental risk
- assist in the identification, evaluation, and prioritization of environmental risks by adhering to procedure EPC-ES-FSD-002, *Environmental Aspects Identification Requirement* and ensuring that PRIDs and/or EXIDs are submitted for your projects and programs
- ensure that employees performing work with significant environmental risk are trained and qualified
- support the development and implementation of the annual directorate environmental action plan
- be prepared to take part in and support your staff in assisting with assessments and audits
- take action on environmental risks, nonconformities and non-compliances
- review and apply any relevant lessons learned

# Your Environmental Commitment

*Click on image to enlarge.*



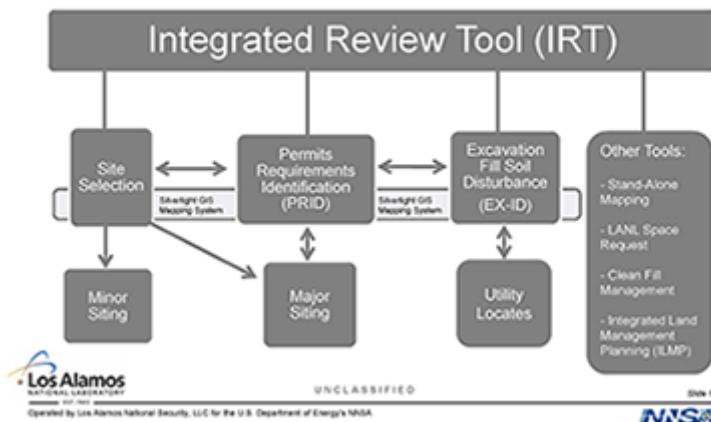
Both employees and managers whose work has environmental aspects are required by SD400 to use the Integrated Review Tool (IRT) for all new and modified work, activities, operations, and projects at the Laboratory, including changes in the scope or location of proposed and current work activities. Work excluded from this IRT requirement includes most office and computer work, including functions such as human resources, purchasing, contracting, and research. This work generally includes such activities as accounting, computer modeling and simulation, software development, data analysis, report writing, and other similar work. In addition, some facility maintenance activities, including some corrective and preventive maintenance, are excluded from the IRT requirement. These activities include, but are not limited to work such as ceiling/floor tile replacement; switches repair; pest control; window pane replacement; plumbing, fire, and life safety systems repair; and repair, service, and maintenance of heating/cooling equipment. Also excluded from environmental review is the extension of existing programs or projects with new funding or with a new sponsor, but with no change in scope or location.

Operated by the Laboratory's Engineering Services Division, the IRT is an easy-to-use web portal that helps determine what, if any, project reviews, permits, and approvals may be required for your project or activity. Providing links to a mapping application and other useful tools, the IRT portal integrates and streamlines the Laboratory's Permits and Requirements Identification (PRID) process and Excavation/Fill/Soil Disturbance (EXID) permit requests.

# The Integrated Review Tool (IRT)

*Click on image to enlarge.*

## Integrated Review Tool



A core feature of the IRT is the PRID tool, a project planning tool used by project leaders to identify required federal, state, and Laboratory permit requirements for projects that include new facility construction; decommissioning, decontamination and demolition activities, and environmental cleanup; cleanout and restoration; and facility upgrades and/or modifications, and numerous other similar activities. PRID helps initiate and facilitate appropriate subject matter expert (SME) reviews in the early planning stages of a project. Project permitting requirements are determined based on information entered into an electronic questionnaire much as Turbo Tax® works to fill out tax forms. Data entered into the PRID can be used for EXID permit requests and minor siting requests.

If a project involves any type of soil disturbance, excavation, or fill activity on Laboratory property, you are required to use the IRT's EXID function. IRT also integrates the creation of a geographic information system (GIS) map for use in identifying the potential regulatory requirements applicable to your project.

The purpose of IRT is to provide a more cost-effective and time-efficient project review process for users and SMEs by reducing redundancy between project review tools and increasing communication and ease of use. The improved communication and procedural efficiencies that come with using IRT increases Laboratory compliance with both regulatory and institutional requirements.

IRT can be accessed at <http://eswebserver.lanl.gov/irt/login.aspx> or by locating the link on the Environment Home page, which can be found under the Environment tab on the Laboratory's internal home page.

# Your Environmental Opportunities: Sustainability and Pollution Prevention

As a responsible steward of the environment, LANL advances sustainability by seeking a balance among environmental stewardship, social responsibility, and economic viability. The Laboratory reduces its environmental impact through sustainable practices, including conserving resources, preventing and minimizing pollution, maintaining regulatory compliance, source reduction and minimizing waste, while trying to be good neighbors and responsible stewards of taxpayer funding. Over the past 10 years, Laboratory workers and contractors have saved the Laboratory and American taxpayers hundreds of millions of dollars by implementing pollution prevention and waste minimization activities. The following examples are just some of the great work that we have done more recently.

## Sustainability and Pollution Prevention Examples

The Heavy Equipment Shop installed two manual parts washers filled with an environmentally friendly cleaning solution called ARMAKLEEN, which is sent offsite for recycling about six times each year. A “check-it-in/check-it-out” policy was implemented in the stock room to limit quantities of aerosol cans issued. The volume of aerosol cans disposed of as hazardous waste decreased by about 50% from the previous year.

The High Performance Sustainable Buildings recommissioning team completed energy savings efforts in eight facilities. This program saved over 720 megawatt-hours of electricity in the past year. The work included implementing night temperature setback schedules, fixing broken equipment, lowering thermostats, and shutting down boilers and heat exchangers during the summer.

Group WX-7 purchased a chromatotron to improve the ability to purify and isolate desired compounds. The chromatotron uses much less solvent and provides a purer end product in a shorter time. So far, about 40 liters of solvent waste have been avoided and about 120 hours of labor have been saved for more productive uses.

LANL personnel designed a new kind of blast pipe made from a tungsten-nickel alloy. The new design is easier to fabricate and build, but it withstands blasting just as well as the old design. The new design does not use any depleted uranium, so less low-level waste is generated.

**Hundreds of your fellow workers have made their mark...what can you do?**

# Sustainability and Pollution Prevention: Specific Ways You Can Get Involved

## Think

It is important to remember that every choice you make in the way you do your work may have an impact on the environment. Use the Laboratory's environmental tools and resources to help you educate yourself and others.

## Contribute

Use the [P2 Toolkit](#) to learn about ways to reduce waste generation and improve the Laboratory's environmental performance. One good way is to sponsor a Pollution Prevention Opportunity Assessment (PPOA)—it can save time and money.

## Recognize

Recommend your coworkers, project, or group for a pollution prevention award—the best ideas come from people like you!

## Collaborate

Contact your EMS POC and support your environmental working group. Bring environmental concerns to your Worker Safety & Security Team (WSST). Submit pollution prevention project proposals for institutional project funding.

## Do Your Part

Help the Laboratory meet its ongoing and focused environmental sustainability goals and requirements by

- minimizing the generation of all waste (especially mixed waste)
- reducing your energy and water consumption—evaluate your workspace and work processes for energy- and water-saving opportunities
- using your purchasing power to save our natural resources—reduce, reuse, and recycle; AND when you must buy, think sustainably and buy green

## Conclusion: A Shared Responsibility, a Shared Fate

The Laboratory's Environmental Governing Policy commits management and workers alike to act as stewards of our environment through our institutional objectives to Clean the Past, Control the Present, and Create a Sustainable Future. The EMS is designed to help Laboratory organizations identify the environmental impacts of their programmatic and operational work activities. Take the time to identify your environmental responsibilities and accountabilities. Think about how your work affects the environment and impacts the Laboratory's environmental performance. Remember, the task of minimizing the Laboratory's impact on the environment is in all of our job descriptions. It is a shared responsibility, and in its outcome lies our shared fate.

# For More Information on the Environment

Environmental requirements and procedures can be found in the policy documents on the Policy Office website.

The Laboratory's [Environmental Support website](#) provides documents, data (including a link to the [IntellusNM website](#)), lists of contacts (including Waste Management Coordinators, Deployed Environmental Professionals, and EMS POCs), web links, and other useful tools and applications.

The Laboratory's EMS Support website provides lists of contacts (including WMCs, facility contacts, deployed environmental professionals, and directorate EMS POCs), news, web links, and tools.

The EMS support team can be reached directly by e-mail at [ems@lanl.gov](mailto:ems@lanl.gov).

## Course Completion

You have completed the Environmental Awareness training. You can review any topic in the course by selecting it on the menu to the left or by clicking the “Request Credit” button below to receive credit for this training.

By requesting credit for this training, I acknowledge that I have read and understand the content of this training and that I will follow and meet requirements of this training, unless it is unsafe to do so.