



## Environmental Assessments and Health Physics

ORAU helps protect workers, the public and the environment from potential radiological and chemical contamination by providing reviews and field surveys to assure contaminated sites are appropriately cleaned up. Working independently from the cleanup contractors, ORAU ensures that necessary quality assurance procedures are in place and verifies whether the cleanup meets federal requirements.

## What We Do

- Independent Verification
- Characterization Surveys
- Radiochemical Analysis
- Health Physics Services
- Health Physics and Radiation Safety Training
- Air Quality Research



## Independent Verification

As government agencies target contaminated sites across the country for decontamination and decommissioning, independent environmental assessment is essential to ensure the safety of those sites, thus building public trust in environmental cleanup.

After decontamination and decommissioning are complete, ORAU independent verification offers unbiased confirmation that the site or facility is decontaminated and meets all compliance criteria before it is released. As the primary independent verification contractor for all U.S. Department of Energy cleanup projects and the only verification contractor for the U.S. Nuclear Regulatory Commission, we have performed independent verification at more than 500 sites in 42 states.

## Characterization Surveys

With ORAU characterization services, agencies receive a detailed report defining the extent of radiological and chemical contamination before the cleanup contractor begins work. This information allows for more accurate cost estimates, appropriate safety precautions to protect workers and the surrounding area during cleanup, proper disposal of radioactive and other hazardous waste materials, and accelerated project completion.

## Radiochemical Analysis

To ensure timely and accurate processing, all samples collected to evaluate radiological contamination levels are analyzed at an on-site radiochemistry laboratory. The lab has achieved DOE accreditation and performs analysis for the NRC, U.S. Department of Homeland Security and other federal and state agencies.



## Health Physics Services

ORAU provides a proven evaluation methodology and a broad spectrum of experience across fuel cycle, environmental and uranium health physics based on more than 30 years of site survey experience. Working with us, organizations have access to our nationally recognized health physicists to provide a full range of health physics support, including:

- Audits and reviews
- Dose modeling
- Internal and external dose assessments
- Nondestructive assay verification
- Implementation of DOE Order 458.1
- Other specialized health physics technical evaluations



## Health Physics and Radiation Safety Training

With more than 11,000 square feet of laboratory-based training facilities, including a Cf-252 neutron activation lab, ORAU offers a unique health physics and radiation training experience where participants engage in hands-on exercises. Visit our website for the complete course schedule, which includes introductory and advanced courses, such as:

- Introduction to Radiation Safety
- Applied Health Physics
- MARSAME (materials and equipment surveys)
- MARSSIM (surveys and site investigations)
- Air Sampling for Radiation Safety
- Gamma Spectroscopy
- Medical Radiation Safety



## Air Quality Research

ORAU meteorologists and engineers conduct climate monitoring and lower-atmosphere research to advance our understanding of climate change and to develop better forecast methods for renewable energy and for transport and dispersion of air pollutants. We work closely with the National Oceanic and Atmospheric Administration's Atmospheric Turbulence and Diffusion Division as they capture and analyze data from more than 1,000 sensors across all 50 states.







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## Environmental Assessment Highlights

### Oak Ridge Reservation Cleanup

By characterizing waste at 34 Oak Ridge National Laboratory facilities and the 2.8 million-square-foot K-33 superstructure at the former Oak Ridge Gaseous Diffusion Plant, ORAU helped DOE accelerate their cleanup schedule by six to 12 months.

### Rocky Flats Verification

The former Rocky Flats Environmental Technology Site is now a 6,000 acre wildlife refuge after extensive cleanup and independent verification. When initial sampling showed residual contamination, ORAU worked with the cleanup contractor until the site could be verified free of contamination.

### Paducah Dose Assessments

At the Paducah Gaseous Diffusion Plant, our experts provided dose assessments for workers and the public by analyzing environmental exposure pathways and resulting doses from radionuclides planned for on-site disposal and those potentially released to a wildlife management area. Analysis was conducted using the RESRAD series of computer codes.

### 3-D Rendering of Indoor Contamination

ORAU developed a method for using a robotic total station to capture the geospatial data necessary for 3-D mapping of radiological contamination indoors. This innovation provides customers with detailed, visual analysis of contaminated locations rather than data showing only the percentage of space that is affected.

## Working with Us

We have a variety of contract vehicles in place to make it easy to work with us, including GSA 899 and the DOE ORISE Work for Others program. Visit [www.orau.org/contracts](http://www.orau.org/contracts) for details.

## Key Customers and Partners

- National Oceanic and Atmospheric Administration
- Pennsylvania Department of Environmental Protection
- U.S. Department of Defense
- U.S. Department of Energy
- U.S. Department of Homeland Security
- U.S. Nuclear Regulatory Commission

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