

## Why do verification?

There are several benefits to conducting independent verification of your D&D projects, including:

- Verification directly supports DOE's strategic objective to build public trust and confidence in DOE's management of nuclear work force health issues and environmental cleanup activities.
- Verification provides consistency among the multitude of decommissioning projects that may be taking place on your site.
- Verification helps ensure that D&D plans and reports are technically sound.
- Verification/confirmatory surveys are recommended in regulatory guidance documents including Draft DOE G 441- 1.XX, MARSSIM, NRC Draft NUREG 1757, and the NRC Inspection Manual.

**“Bringing in ORISE as the independent verification contractor on this project was the best money I could have spent.”**

*-DOE Project Manager*

## What does it cost?

Authorized funding requirements depend upon overall project scope, but historically range from less than one percent up to three percent of the total D&D project budget.

In the past, DOE Headquarters provided funding for the independent verification activities that supported the various DOE Environmental Management D&D programs. However with decentralization, funding responsibility has shifted to the operations and field offices.

DOE facilities may readily access ESSAP's technical assistance by issuing a scope of work and funding transfer through either a FIN Plan or Interoffice Work Order (IWO). Contact ORISE's Financial Operations at (865) 241-3368.

Other government agencies need only issue a scope of work and funding transfer through the DOE Oak Ridge Operations Office Work for Others (WFO) office. Contact ORISE's WFO office at (865) 576-8533.

For more information about independent verification or ESSAP's capabilities contact:

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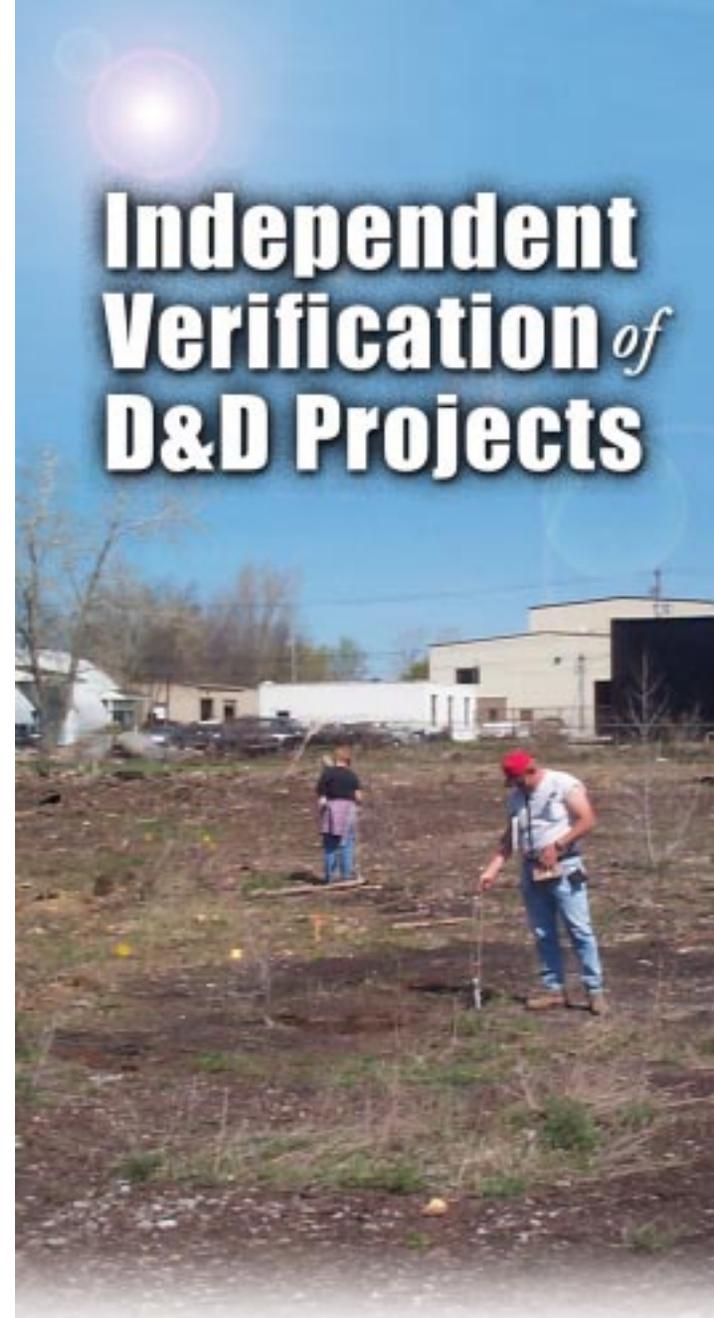
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Or visit our Web site at [www.orau.gov/essap](http://www.orau.gov/essap).



The **Oak Ridge Institute for Science and Education** (ORISE) is a U.S. Department of Energy facility focusing on scientific initiatives to research health risks from occupational hazards, assess environmental cleanup, respond to radiation medical emergencies, support national security and emergency preparedness, and educate the next generation of scientists. ORISE is managed by Oak Ridge Associated Universities.

# Independent Verification of D&D Projects



# Environmental Survey and Site Assessment Program

# ESSAP

Oak Ridge Institute for Science and Education

The **Environmental Survey and Site Assessment Program (ESSAP)** of the Oak Ridge Institute for Science and Education (ORISE) was established in 1980 to provide the U.S. Department of Energy (DOE) and U.S. Nuclear Regulatory Commission (NRC) with independent technical expertise to evaluate the radiological conditions at sites throughout the U.S. that are undergoing decommissioning. Only performing work for the regulatory authority has allowed us to retain our independence and thereby eliminate any perceived conflict of interest.

“...the painstaking review of the characterization data and attention to detail resulted in a potential cost savings as well as an improvement in remedial activities at this site. This performance is highly commendable.”

-DOE Division Director in a letter to the ESSAP Program Director

ESSAP has been directly involved in the performance of critical technical reviews of project documentation and the on-site surveys of these facilities. Since inception, ESSAP has provided technical health physics and environmental expertise related to the decommissioning final status of both real and non-real property at over 500 sites.

## What does verification entail and what are ESSAP's resources?

- **Plan reviews.** Reviewing project plans and documentation ensures the plans are technically sound and that final status reports adequately document the site status.
- **MARSSIM.** ESSAP's verification process ensures the site has appropriately adapted MARSSIM or other final status survey guidance. ESSAP has demonstrated MARSSIM expertise through original MARSSIM work group membership, development of COMPASS software to facilitate the use of MARSSIM, and the development of the first MARSSIM training course with over 50 courses successfully completed to date.

- **In-process evaluations.** ESSAP staff will evaluate the D&D contractor's current procedures and make recommendations for change as necessary.
- **Surveys.** Independent surveys performed by health physics professionals (certified health physicists, health physicists, and health physics technicians) with an average of 10 years experience. Surveys are

“ORISE personnel should be commended for their sustained, excellent performance on external blind PE (performance evaluation) programs.”

-Excerpt from the NRC 2002 Audit Report for the ESSAP Laboratory

performed using ESSAP's field instrumentation arsenal of hand-held alpha, beta, and gamma radiation detectors; floor monitors; pressurized ionization chambers; and an *in situ* gamma spectrometer.

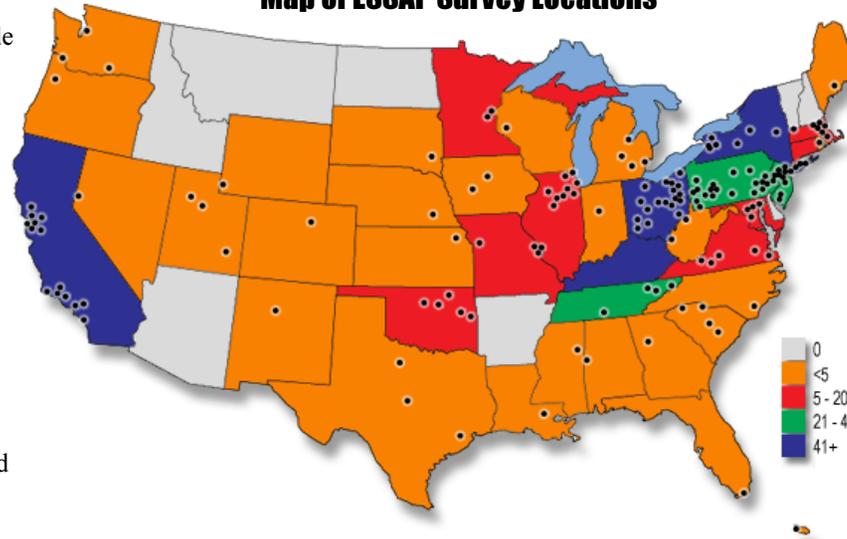
- **Analysis.** Analysis of samples is conducted using ESSAP's in-house radioanalytical laboratory which offers rapid turnaround of verification samples with results backed up by our documented, exceptional performance evaluation results.

## ESSAP Survey Sites

Types of DOE sites and their contaminants include

- FUSRAP (23 of 46 total sites)—primarily uranium and thorium
- WSSRAP—uranium, thorium and various chemicals
- Santa Susana Field Laboratory (ETEC)—fission and activation products, uranium, TRU
- East Tennessee Technology Park (K-25)—enriched uranium, Tc-99
- Argonne National Laboratory—fission and activation products, TRU
- Brookhaven National Laboratory—fission and activation products
- Mound, Fernald, Paducah, LANL—uranium and TRU

Map of ESSAP Survey Locations



- Shippingport, Hallam Reactor, UC Davis (LEHR), Ann Arbor Inertial Fusion Confinement Facility, Palos Park—fission and activation products, tritium, radium

NRC Licensee and SDMP sites include

- Uranium mills
- Fuel fabrication
- Power reactors—Fort St. Vrain, Shoreham, Maine Yankee, Trojan
- Research reactors—UCLA, Texas A&M, University of Utah, Iowa State, Watertown
- Rare earth facilities
- General licensees