



Project Summary:

Rocky Flats Verification Project

Location:
Rocky Flats Environmental Technology Site (Golden, CO)

Government Agency:
U.S. Department of Energy

Project Timetable:
October 2002 to December 2005

The Rocky Flats (CO) Environmental Technology Site (RFETS) is a U.S. Department of Energy (DOE) facility that operated until 1992 as a nuclear weapons research, development and production complex. Once considered one of the most contaminated nuclear facilities in the world, RFETS was the subject of an extensive nuclear cleanup and closure project that spanned from 1996 until 2005. Oak Ridge Associated Universities (ORAU) was contracted by DOE in 2002 to conduct independent verification of the cleanup contractor's final status survey design and implementation at RFETS.

Specifically concerned with locating areas of residual plutonium contamination, ORAU health physicists and survey technicians performed surveys and verification at seven contaminated facilities, as well as surveyed soil at an on–site location previously used for equipment decontamination. The objective of the verification surveys was to implement the data quality objectives as defined in the Independent Verification Program Plan. This required confirmation that remedial actions were effective in meeting the applicable, unrestricted release criteria and that the cleanup contractor's documentation accurately and adequately described the final radiological conditions of the associated areas. To achieve this objective, the survey team:

- Implemented the Multi–Agency Radiation Survey and Site Investigation Manual's (MARSSIM) guiding principles to assess the decommissioning and decontamination (D&D) contractor's process.
- Performed document reviews and provided comments, where necessary, on the D&D contractor's decommissioning operations plan, pre–demolition survey plans and supporting documentation.
- Evaluated the D&D contractor's methodology used to calculate the average surface contamination values and the procedures for the selection, calibration and use of survey instrumentation.
- Conducted surface scans for alpha and low–energy gamma radiation and Total Surface Activity (TSA) measurements.
- Scanned and identified locations containing elevated activity using gas proportional, dual phosphor and zinc scintillation detectors, and a field instrument used for the detection of low–energy radiation (FIDLER).
- Identified numerous floor, wall and ceiling surface locations exhibiting contamination in excess of the release criteria.
- Analyzed radiological concrete core and media samples at the ORAU/ORISE laboratory in Oak Ridge, TN, using gamma and/or alpha spectroscopy.
- Recommended further decontamination or removal of areas containing elevated contamination and proposed follow–up surveys to ensure compliance with release criteria.
- Built a relationship with local stakeholder advisory board by providing routine briefings and hosting a visit to our radiochemistry laboratory and field survey operations to improve its understanding of site cleanup.

Partnerships for Innovation

ORAU
OAK RIDGE ASSOCIATED UNIVERSITIES

P.O. Box 117, Oak Ridge, TN 37831 ▪ (865) 241–8893 ▪ IVSurveys@orau.org
On the Web: www.orau.org/environmental–assessments–health–physics/