

Remote Sensing Laboratory

Nevada Test Site



Advanced technology created at the Remote Sensing Laboratory is used in the war against terrorism.



An aerial survey, such as this one of Washington, DC, is conducted to provide baseline data in the event of an actual emergency.

Introduction

The Remote Sensing Laboratory (RSL) is a center for creating advanced technologies that provides a broad range of scientific, technological, and operational disciplines with core competencies in emergency response operations and support, remote sensing, and applied science and technologies in support of counterterrorism and radiological incident response.

Background

The Atomic Energy Commission originally established the "Aerial Measurements Operations" at Nellis Air Force Base in Las Vegas, Nevada in the 1950s. It was created to serve the worldwide emergency system by providing rapid response to radiological emergencies. In 1976, The U.S. Department of Energy (DOE) established an Aerial Measurements Operations at Andrews Air Force Base in Maryland to provide scientific and technical support to counterterrorism efforts during U.S. Bicentennial events in Washington, D.C. With a location on each coast, the RSL has served for more than fifty years as a valuable national asset for nuclear emergency response and remote sensing capabilities.

Emergency response

When RSL was first established in the 1950s, emergency response was one of the core functions of the laboratory. Today, emergency response is still a core function at RSL, encompassing a wide range of activities and advanced technologies.

RSL emergency response teams are on-call 24-hours a day and support the DOE Accident Response Group, the Federal Radiological Monitoring and Assessment Center,

and the Nuclear Emergency Support Team. These teams are specially trained and fully equipped to respond to a variety of radiological situations. They maintain the capability to deploy domestically and internationally in response to nuclear threats involving the loss, theft, or release of radioactive material that might occur in nuclear power plant accidents, nuclear terrorist incidents, NASA launches, and transportation accidents.

As part of its emergency response, the RSL provides:

- Crisis response and consequence management assistance
- Emergency communications networks
- Logistics and operations support
- Training and exercise planning and execution



Remote sensing science and technology

RSL has a worldwide reputation for developing and customizing state-of-the-art instruments and producing standard-setting technologies in remote sensing. A pioneer in remote sensing, the RSL has developed accurate and credible remote sensing applications and technologies used for a variety of aerial and ground-based platforms to acquire a wide range of environmental data.

RSL can provide large-area radiological mapping and ground contamination mapping in the event of a radiological release. Algorithm research for image analysis of spectral imagery is used to monitor environmental conditions, assess vegetation stress, to detect hard/buried targets, minefields, buried objects, and treaty-specific processing facilities.

RSL remote sensing capabilities include:

- Radiation detection, monitoring, surveillance, and analysis
- Multispectral and hyperspectral sensing
- Thermal infrared imaging
- Geographic information systems
- Photography and videography

Counterterrorism science and technology

RSL supports the nation's counterterrorism efforts with customized products and prototyping. Focused on rapid turn-around and advanced technology solutions, the RSL specializes in unique technological disciplines in counter-terrorism including:

- Special instruments for active and passive electromagnetic application
- Nuclear, chemical, and biological detection systems
- Sensor development, testing and application verification
- Real-time mission support
- Instruction and currency training on specialized equipment

RSL also provides force and facility protection to U.S. domestic and international assets, including technical security for events such as the Olympic games. Scientists at RSL conduct facility and site vulnerability assessments in order to design, install, and maintain facility early warning systems for nuclear, biological, and chemical weapons of mass destruction.

RSL technical assets

RSL is comprised of research, testing, and fabrication laboratories and shops. An extensive collection of highly sophisticated state-of-the-art equipment used in scientific and technical integration projects, and emergency searches, is housed at RSL.

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