RSL scientists discuss flight data with pilot.

Who We Are

The Remote Sensing Laboratory (RSL) is the nation's premier center for creating and using advanced technologies and scientific solutions in support of counterterrorism and radiological incident response. Supporting the Nevada National Security Site mission, the RSL features core competencies in emergency response operations and support, remote sensing, and applied science and technologies.

RSL is comprised of scientists, engineers, technologists, pilots, operations specialists, information technology professionals and administrators who develop and customize state-of-the-art instruments and technologies in remote sensing. RSL uses aerial and ground-based technologies to acquire a wide range of environmental data before, during and after emergencies.

With more than 200 personnel at Nellis Air Force Base in Las Vegas, Nevada, and Joint Base Andrews outside of Washington, D.C., RSL can provide support and redundancy across the country. RSL has response teams on call 24/7 year-round, and can nimbly deploy personnel with advanced technologies worldwide to support the National Nuclear Security Administration's response to emergencies and counterterrorism efforts.

NEVADA NATIONAL NNSS SECURITY SITE

Global Security

Remote Sensing Laboratory

Science and Technology

RSL provides specialized air and ground monitoring in the event of a radiological release. Scientists use this information, combined with special algorithmic processes, to assess environmental conditions, determine changes to vegetation and agricultural products, detect nuclear targets and distinguish treaty-specific facility issues.

RSL operations have provided security and emergency preparedness for large-scale public events including the Boston Marathon, Presidential Inaugurations, Super Bowls, national political conventions and New Year's Eve celebrations on the Las Vegas Strip. The crisis response and consequence management response teams are specially trained and equipped to respond to a full spectrum of nuclear and radiological situations, from nuclear power plant accidents and terrorist incidents to NASA launches and special security events. RSL's combined teams cover hundreds of square miles of terrain every year, collecting background data and providing local officials with vital safety information.

Emergency Communications

The Emergency Communications Network (ECN) supports global emergencies through a secure telecommunications network. During emergency events, the ECN serves as a primary communications platform for Department of Energy (DOE)/National

An ECN scientist sets up a mobile satellite package.

Nuclear Security Administration (NNSA) emergency response assets, providing data, video and voice communications to enable data telemetry, collaboration, decision making and response.

The ECN operates separate and distinct unclassified and classified networks. Supplemental telecommunications technologies are employed by the ECN to facilitate effective global network support and augment communications availability.

ECN core nodes are in key physical locations throughout the country, including Washington, D.C., Albuquerque, New Mexico, and Las Vegas, Nevada. A key component of the ECN is the mobile deployment package that provides a portable dynamic communications capability for DOE/NNSA emergency response assets, with full connectivity to the ECN and other networks. The mobile package also provides satellite communications backup capability for fixed nodes and home team terrestrial circuits. It provides the same capability as the core nodes, including wide-band satellite connectivity between NNSA emergency response assets and home teams,

Responder performs radiological search operations.

AMS personnel discuss aerial mission with pilots.

and simultaneous support of multiple deployed systems.

Homeland Security and Counterterrorism Solutions

RSL supports the nation's counterterrorism efforts with customized products and prototyping. With a focus on rapid turnaround and advanced technology solutions, RSL scientists, engineers, and technologists specialize in unique technological disciplines in counterterrorism including special instruments for electromagnetic detection systems, nuclear detection systems and sensor development, testing and application verification, and real-time mission support.

RSL provides protection for domestic and international personnel, facilities, assets and activities. Subject matter experts conduct facility and site vulnerability assessments in order to design, fabricate, install and maintain early warning systems for nuclear and radiological attacks. RSL can also perform similar assessments and provide technical security for special events such as the State of the Union Address and the Olympic Games.

Mission Partners

The Applied Technologies (AT) division develops and creates tailor-made instruments and produces standard-setting technologies in remote sensing. AT proudly partners with its current customers to address pressing national security needs, offering partners access to the science, people and infrastructure of the Nevada National Security Site.

AT works with industry, small businesses, universities and government agencies to support the NNSA in developing new products and services to contribute to energy independence, enhance national security, protect the environment and increase economic prosperity.

RSL scientists fly a mission.

In collaboration with mission partners, AT provides custom services including:

- Radiation detection, monitoring, surveillance and analysis
- High-speed remote data measurement and transmission
- Secure mobile communications
- Geographic information systems
- Photography and videography

Interested in partnering with us? Reach out at connect@nv.doe.gov.

Recent Developments

RSL created a sensor network, data telemetry, analysis functions, and visualization capabilities for continuous air monitoring to detect any anomalies in the release of special nuclear materials during the Mars 2020 Perseverance rover launch. Support included:

- Development of software for data processing
- Production of 30 acquisition and telemetry systems
- Exercises and dress rehearsals at the Kennedy Space Center for over two years
  - Seven-member team on site for 15 days prior to launch and a three-member team on site for 50 days prior to launch
- NNSA and NASA shared units (deployable from RSL during emergency response operations)

National Nuclear Security Administration

For more information, visit:

www.nnss.gov

NNSS-RSL1-U-0032-Rev02
September 2022