Safe treatment of waste high explosives

Excellence in National Security

Protecting the environment while continuing national security missions

Treating waste high explosives in LANL's remote areas is a safe and environmentally sound option.

Background

Under the Resource Conservation and Recovery Act (RCRA), LANL has obtained a permit from the New Mexico Environment Department for management of hazardous waste. The permit allows for storage or treatment of waste at 26 LANL sites or "units." Two additional units currently under "interim" status would be added to the permit under the current modification request.

As a national security laboratory, some of LANL's missions involve high explosives. It is a *core value* of the Lab to treat waste high explosives safely, away from the public, and in an environmentally responsible manner.

How LANL generates high explosive wastes

LANL possesses unique and world-class expertise in explosive materials. The Lab applies that expertise to a number of national security missions, including:

- Training troops to detect, investigate, and defeat Improvised Explosive Devices (IEDs)
- Detecting explosives at airports
- Stress, impact, and heat testing of aging, conventional explosives used in nuclear weapons
- Developing safer, "shock insensitive" explosives

Waste high explosives are solid and come in various shapes and sizes.

High explosives can be granules or plastic-like chunks and pieces in various shapes and sizes. After a test—a heating test, for example—these pieces are no longer as predictable and must be treated responsibly.

Treatment by open detonation

LANL's trained crews take the waste high explosives to one of two remote locations, apply booster explosives, and detonate them in batches that average about 60 pounds each. The explosions completely consume the material, leaving no hazardous materials behind.

Environmental responsibility and public safety

- The detonations reduce explosives to their basic, non-hazardous components of carbon dioxide, nitrogen, and water.
- While the explosions throw dust into the air, no emissions are detectible outside Lab property.

Stormwater monitoring near a detonation site

A waste detonation "shot" at a remote Lab location, with a fire crew on standby.

- The Lab monitors soil, runoff, and wildlife at each site.
- Residual contaminants are below EPA standards and no harmful effects on wildlife populations have been found.
- Detonations in the Lab's secure, remote area are safer than transporting the material on public roads for similar treatment elsewhere.
- The Lab carefully schedules detonations and monitors weather conditions to minimize noise travelling off Lab property.
- A denial of open detonation would harm national security, with no appreciable benefit to people or the environment.

Other aspects of the permit request

The permit modification

- Requests closure of two unused detonation areas and three other units
- Standardizes procedures to industry best practices
- Contains an analysis of alternatives to open detonation
- Contains an environmental baseline analysis

For more information:

www.lanl.gov/environment/waste/rcra.shtml

To get involved:

Submit written or verbal comments.

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