

**Los Alamos National Laboratory
Responses to Questions**

New Mexico Radioactive and Hazardous Materials Committee Meeting of July 18, 2011

Question:

What is the long term strategy for TRU Waste disposal?

Answer:

There is no statutory closure date for WIPP. Rather, the end date for WIPP will be determined by the Department of Energy (DOE) Secretary. For planning purposes only, DOE has estimated that the disposal of legacy defense TRU waste may end in 2030. However, this end date is continuously evaluated in light of the status of sites and programs generating TRU wastes. In the event that significant volumes of TRU waste remain and continue to be generated, DOE will either take actions to extend the operations of WIPP or identify alternative disposal strategies.

Question:

Can hydrophobic soils be remediated?

Answer:

Some remediation is achievable; however, these fire induced damages are not easily healed. Depending on the scale, duration, and frequency of the invasion, restoring the ecosystem to its original condition may not be technically or financially feasible. Over time, the soil will be broken up by the re-growth of plants, animal activities, soil microorganisms, and weather freezing and thawing.

During post Cerro Grande remediation it was found that straw mulching was the most effective way to remediate hydrophobic soils. Straw cover acts as a pre-wetting agent. Once a soil with hydrophobic tendencies is wetted it has the ability to provide for infiltration during precipitation events. The amount and strength of hydrophobic conditions in 2011 is far less than what we observed in 2000 and is scattered vs. contiguous.

Approximately 23% (28,470 acres) of the fire burned with high severity and 25% (39,910 acres) burned with moderate severity. Combined, the high and moderate severity accounted for 48% (68,380 acres) of the burned area. From a soils and watershed condition standpoint, these burned acres will account for a majority of the erosion and sedimentation in the burned area.

Results of hydrophobicity tests from 30 sites throughout the burn area indicate highly variable soil conditions. Even though there may be somewhat limited fire induced hydrophobic tendency within the burn (30-40% of moderate and high burn severity with the aerial extent), watersheds will realize significant increased hydrologic response and loss of control of water.

The treatments proposed by the BAER team to minimize risk after the Las Conchas Fire include:

- Seeding and mulching around the Pajarito Nordic Ski Trails
- Protecting cultural sites with tree removal and mulching
- Stabilize recreation trails in order to minimize erosion from post-fire runoff

- Seeding in two watersheds with considerable amounts of high and moderate burn severity
- Mulching in high and moderate burn severity within Bland Canyon

Question:

What would happen if LANL lost power during a fire?

Answer:

The National Nuclear Security Administration (NNSA) and PNM have two independent sources of power supplying electricity to the Laboratory and County of Los Alamos. On site the Laboratory also has redundant power lines to route power within the site. It is possible for fire to damage the electrical infrastructure and interrupt power to the Laboratory. However, the main power lines do not traverse densely forested areas and the likelihood of a fire impacting both redundant transmission feeds is extremely low.

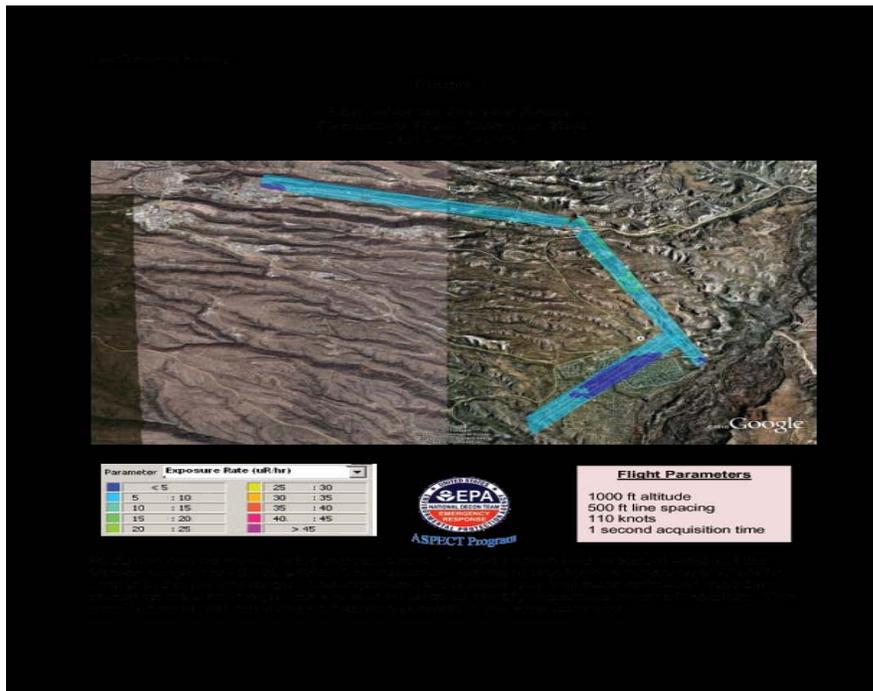
The Laboratory has backup power at the facility level and has on-site generation capabilities. The facility backup power is diesel powered and would typically last 24 hrs. using the facility's storage tanks before needing to be refilled. The on-site generation capabilities, which can meet critical infrastructure power needs, are natural gas powered and are limited only by the availability of natural gas from NM Gas Co. In addition, a portion of the on-site generation can be powered by fuel oil and the Laboratory maintains a 3-4 day supply of fuel oil on site. In addition to the backup power and on-site generation, the loss of electrical power is analyzed for hazardous activities, as appropriate, and safety systems are in place (i.e. passive, battery backup, or diesel backup) to ensure that the sites are placed in a safe configuration and there are no major issues resulting from the loss of electrical power.

Question:

What was the baseline dataset for the ASPECT plane?

Answer:

Radiation can be measured in exposure rate. The typical background exposure rate in New Mexico ranges from 5 – 20 $\mu\text{R/hr}$ (micro Rad per hour). This background range is based on naturally occurring radiation and is similar to other mountain states. The maximum exposure rate for this survey was 12 $\mu\text{R/hr}$. This is in the normal range. The exposure rate contour map included below indicates estimated radiation exposure rates on the ground and can be used to identify hazardous levels of radiation. This map indicates that there are no hazardous levels in the area surveyed.



Los Alamos Survey Areas Exposure Rate Contour Map - June 30, 2011

Question:

How much funding was received after the Cerro Grande Fire and where was it allocated?

Answer:

Los Alamos National Laboratory received \$331M for the Cerro Grande Fire Recovery.

\$99M – Physical Damage, Destruction Repair, and Risk Mitigation

- \$44M - Buildings (Facility Infrastructure, D&D, Equipment)
- \$43M – Erosion Control (debris removal, mudslide protection, and water diversion for flood control)
- \$12M – Planning – Risk Mitigation/Replacement Projects

\$51M – Restoring Services (Utilities, Communications, & Transportation)

- \$44M – Utilities (repairs, replacement damage, resumption of services, and precautionary measures for water, gas, and electrical infrastructure)
- \$2M – Temporary Housing / Crisis Management
- \$5M – Communications

\$55M – Emergency Response

- \$24M Staff Assignments and overtime (costs for emergency relief operations for staff, work for others, and service contracts – including fire department staff and equipment)
- \$23M – Fire Risk Reduction and Mitigation (fire breaks, fire roads, and thinning wild lands)
- \$3M – Fire Alarm System
- \$5M - Air and Water monitoring

\$32M – Resuming Laboratory Operations

- \$5M – Site-wide EIS, Cultural resources, and endangered species
- \$27M – Resumption of Laboratory programmatic operations (replacement of destroyed equipment, vehicles, computers, etc.)

\$94M – Cerro Grande Construction Projects

- Emergency Operations Center, Communication system, Fire Alarm System Waste Management Risk Mitigation Project, Office Buildings (2)

Other federally funded Cerro Grande Projects:

- Emergency Flood Mitigation Efforts (Army Corp of Engineers)
 - Construction of a flood retention structure
 - Built weirs to control run-offs
 - Hydro-seeding
- Fire Department vehicles and equipment (Los Alamos County)
- Interagency fire center and helicopter fire base