

## Area G at Los Alamos

### *Lab Plans Expansion and Operations Until at least 2044*

### *Dump Will Pose Environmental Threat for 1,000s of Years*

On a mesa top immediately south of the San Ildefonso Pueblo Sacred Lands, sits Los Alamos National Laboratory's (LANL's) "Material Disposal Area G". In operation since 1957 at Technical Area-54, it is the Lab's 65-acre "low-level" radioactive waste dump, containing both surface waste storage areas and subsurface waste landfills. Above ground, in large tent-like structures visible from Santa Fe, an estimated 40,000 to 60,000 drums of transuranic<sup>1</sup> (TRU) waste await shipment to the Waste Isolation Pilot Project<sup>2</sup> (WIPP). Area G, covering an area equivalent to 49 football-fields, also has inactive, subsurface disposal units consisting of 32 pits, 194 shafts, and 4 trenches ranging from 10 to 65 feet deep. There are also two pits currently accepting newly generated "low-level" wastes.<sup>3</sup> The total excavated volume of all these just-below-ground units is over 1 million cubic meters. Even though that would fill Texas Stadium, **Area G is slated to increase in size because of the Lab's expanding nuclear weapons programs.** In contrast to municipal and county landfills regulated by the state government, which has required liners since 1993, Area G has no present or planned dump liners.

Area G is technically "low-level" only in that LANL stopped dumping higher-level radioactive and mixed hazardous wastes in 1985 following the enactment of the Resource and Conservation Recovery Act (RCRA) in 1980. Prior to 1985 Area G received, for example: "high-level beta-gamma waste", irretrievable TRU waste, hot-cell waste, tritium, uranium, other radionuclides, solvents, animal tissue, fuel elements, control rods, PCB oil, "mixed fission products", "mixed activation products", "graphite fuel rods", "reactor control rods," and "Pu-238 [an especially dangerous plutonium isotope] waste."<sup>4</sup>

Given the half-lives of many thousands of years for some of these radioactive materials, **Area G can hardly be called a "low-level" radioactive waste dump just because LANL has refrained from dumping hotter wastes for the last 20 years.** The total volume of estimated radioactive wastes dumped at Area G through 1990 is 853,127 cubic meters, or the equivalent of 4.1 million 55-gallon drums, and 1.6 million pounds of chemical wastes.<sup>5</sup> Prior to 1980, Area G received hazardous contaminants including arsenic, beryllium, lead, mercury, and PCBs. Data for waste volumes at Area G since 1990 are not, to our knowledge, publicly available, but even **by 1990 the volume of wastes was almost 5 times greater than WIPP.** In comparison, the total volume of WIPP under current legislation is 175,564 cubic meters.<sup>6</sup>

**The extent of environmental contamination from Area G is presently unknown because LANL has never made a serious effort to do so.** This will almost certainly change because the New Mexico Environment Department (NMED), last March, issued a Consent Order that prescribes an extensive suite of monitoring and reporting requirements for all of the Lab, and particularly Area G. As the Lab itself admits, present "data gaps [for Area G] identified include:

1. the vertical extent of tritium in subsurface ... near the high-activity tritium disposal shafts;
2. the vertical extent of the vapor-phase VOCs [volatile organic chemicals such as trichloroethene];
3. the extent of radionuclides and inorganic chemicals beneath and adjacent to several disposal units;
4. the nature and extent of perchlorate, nitrate, and high-explosives contamination; and
5. the need for additional sediment samples."<sup>7</sup>

## The Regulatory History of Area G

In 1965, Congress first responded to the need for regulating the handling and disposal of solid wastes by passing the Solid Waste Disposal Act. The Act established grant programs to help states and interstate agencies improve disposal practices. In 1976, the Resource Conservation and Recovery Act (RCRA) was passed as an amendment to the Solid Waste Disposal Act. RCRA was the first substantial congressional effort to create a “cradle-to-grave” regulatory structure for the management and disposal of hazardous wastes,<sup>8</sup> with the Environmental Protection Agency (EPA) as the regulating authority. In 1985, NMED<sup>9</sup> was given RCRA authority over hazardous wastes.

In 1990, New Mexico also received authorization from the EPA to regulate the hazardous portion of mixed wastes. The 1992 Federal Facility Compliance Act then amended RCRA with the primary purpose of explicitly waiving federal sovereign immunity from all federal, state, interstate, and local requirements and possible penalties. This Act also required the DOE to submit an inventory of all its mixed waste and to develop treatment plans, which the DOE has yet to adequately and fully compile and implement. In addition, there still remains an unresolved legal issue over the regulation of mixed wastes posed by the conflicting requirements of the 1954 Atomic Energy Act and RCRA as amended. The 1954 Act explicitly gave DOE’s predecessor agency sole jurisdiction over unmixed radioactive wastes and the radioactive portion of mixed wastes. Following protracted negotiations with NMED over the Consent Order, the Lab and DOE agreed to “voluntarily” report on radioactive contaminants. However, **the issue of which governmental entity, the federal Department of Energy or the State Environment Department, regulates the radioactive portion of mixed wastes remains unresolved.**



*LANL photograph of an open, unlined pit at Area G, circa 2002.*

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Nevertheless, given the fact that LANL handles large volumes of hazardous materials, the Lab is required to have a RCRA permit regulated by New Mexico. In 1980, LANL submitted to the EPA a “Part A” RCRA permit application.<sup>10</sup> However, the Lab withdrew its application in 1985, claiming that it had stopped hazardous waste disposal at Area G. After New Mexico was granted RCRA authority by EPA, LANL submitted to NMED a “Part B” RCRA permit application,<sup>11</sup> which included **a required closure plan for Area G.**<sup>12</sup> **NMED ruled that plan deficient, and has repeatedly judged successive draft closure plans deficient as well.**

The New Mexico Hazardous Waste Act requires a closure plan that controls, minimizes or eliminates, to the extent necessary to protect human health or the environment, post-closure escape of hazardous waste, hazardous constituents, or contaminated run-off to the ground or surface waters or to the atmosphere, and monitoring for 30 years. **Thus, without a closure plan, Area G has been noncompliant with the New Mexico Hazardous Waste Act since 1985.** In addition, LANL repeatedly requested a waiver from groundwater monitoring requirements, contending that groundwater contamination was impossible. NMED eventually denied that waiver.

In November 1989, NMED issued the Lab a RCRA permit that included Area G. In January 1999, while anticipating the statutory 10-year term limit to RCRA permits, LANL submitted a Part B application for permit renewal, including Area G. Again, NMED deemed that the Area G closure plan did not comply with State Hazardous Waste Regulations. From there, little progress was made in a renewed Lab RCRA permit, although it has been “administratively extended” by NMED. The upshot is that Area G, which the Lab plans to expand and operate until

the year 2070,<sup>13</sup> has never had an approved closure plan as required by State law. This will likely change as NMED will reportedly issue a new draft RCRA permit in early spring 2006, which NukeWatch has pushed for over four years. **LANL has repeatedly stated that it plans to just “cap and cover” the existing 65 acres, leaving hundreds of thousands of cubic meters of radioactive and chemical waste perched above the regional aquifer for future generations.** The public participation process required during permit renewal will be a valuable opportunity to seriously challenge the Lab’s plans for non-cleanup.

## **Plans for Area G Expansion**

In January 1999, the Department of Energy (DOE) released a final Site-Wide Environmental Impact Statement (SWEIS) for Continued Operations of LANL, required every ten years under the National Environmental Policy Act. The SWEIS considered four LANL mission “alternatives”: the status quo; a “green” scenario in which the Lab was redirected toward nonproliferation efforts; reduced nuclear weapons operations; and **expanded nuclear weapons operations. DOE inevitably chose the latter as the future direction for the Laboratory.**

Two interrelated facility-specific operations were analyzed in the SWEIS: expanded plutonium pit production and expanded low-level radioactive waste disposal at Area G. DOE decided to do both. With respect to Area G, DOE planned for the development of 30 acres within Area G called Zone 4, immediately west of the active disposal area, and 40 acres named Zone 6, located further uphill. The driver for Area G expansion is that, under expanded nuclear weapons operations, **LANL anticipated that 117,000 cubic meters of low-level radioactive waste would be generated over 10 years.** With then-current Area G capacity estimated at 36,000 cubic meters, that left a shortfall of 92,000 cubic meters.<sup>14</sup> Accordingly, in its Record of Decision for the LANL SWEIS, DOE decided to “develop both Zones 4 and 6 in a step-wise fashion, expanding these areas, as demand requires.”

**DOE is preparing a new Site-Wide EIS, reportedly to officially raise the level of future plutonium pit production, with a draft scheduled for March 2006. In its notice, DOE omitted reconsideration of Area G expansion as a subject of analysis in the SWEIS, a position that NukeWatch strongly disagrees with.** The need for reconsideration has also been raised by recent recommendations of the Northern New Mexico Citizens’ Advisory Board, impaneled by the DOE itself to give citizen input into waste management practices at LANL. **The Board’s recommendations are: 1) No expansion of Area G; 2) DOE and LANL should “cease and desist” from burying radioactive and hazardous wastes at Area G; and 3) DOE and LANL should shift costs from constructing burial sites, running disposal operations or planning future remediation to efforts that reduce and eliminate the production of contaminated wastes, with the ultimate goal of “zero discharge.”** (See Recommendation #2005-10 at [www.nnmcab.org](http://www.nnmcab.org).)

## **NukeWatch Recommendations**

- Area G should be closed down because it has long operated in noncompliance with federal and state environmental laws and does not have a comprehensive system of liners to help protect the environment and the regional aquifer.
- NMED’s upcoming RCRA permit for solid waste disposal at LANL should tolerate nothing less than a comprehensive and credible closure plan for Area G.
- NMED should zealously enforce its extensive monitoring and reporting requirements in its Consent Order for Area G, followed by mandated cleanup if the determined extent of contamination merits it.
- Any current plans for expansion of Area G should be thoroughly reconsidered in the new LANL SWEIS.
- In the RCRA permit, Corrective Action Order, and Site-wide EIS processes the Lab’s plans to simply “cap and cover” Area G’s pits and shafts should be seriously challenged and overruled if the potential long-term environmental effects are judged to be intolerable.
- The Lab should embrace the Citizens’ Advisory Board’s recommendation to seriously work toward a goal of “zero discharge” of radioactive and hazardous contaminants.

## **We Need Your Help**

- **To pressure DOE and LANL to reconsider Area G expansion in the new SWEIS.**
- **To pressure NMED in the RCRA permit process to not allow LANL to just cap and cover existing wastes at Area G without a critical analysis of its potentially negative long-term environmental impacts.**

Both of the above have required public participation provisions, and public input and comment can make all the difference! Stay tuned to [www.nukewatch.org](http://www.nukewatch.org) as events unfold beginning in spring 2006.

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*October 10, 2005*

### **(Notes)**

<sup>1</sup> Transuranic (TRU) waste is defined as containing alpha-emitting particles with half-lives greater than 20 years and present in concentrations greater than 100 nanocuries per gram of material. Since 1980, RCRA has required that all TRU wastes be stored for shipment to the Waste Isolation Pilot Plant.

<sup>2</sup> WIPP, near Carlsbad in southern NM, is the world's first deep geologic repository for TRU wastes.

<sup>3</sup> "Low-level radioactive waste" is a catch-all term characterized by what it is not, i.e. not high-level or transuranic wastes or spent nuclear fuel. However, "low-level" can be very hot. As the Nuclear Regulatory Commission puts it, "The radioactivity can range from just above background levels found in nature to very highly radioactive in certain cases such as parts from inside the reactor vessel in a nuclear power plant."

<sup>4</sup> MDA G Investigation Work Plan, Revision 1, LANL, June 2004, Table B-1.

<sup>5</sup> *Ibid.*, p. B-46. However, numbers both within this plan and relative to other studies are all over the map, which itself is indicative of the sorry state of data for Area G. It may be that up to 66% of the 853,129 meters<sup>3</sup> of waste mentioned above is crushed volcanic tuff that was mixed with the wastes. Given that the tuff material would now be contaminated as well, the end result is pretty much the same.

<sup>6</sup> From the 1992 WIPP Land Withdrawal Act.

<sup>7</sup> Installation Work Plan, LA-UR-03-6491, September 2003, Executive Summary.

<sup>8</sup> For any material to be regulated as a hazardous waste it must first fall under the regulatory definition of solid waste and then the definition of hazardous waste, all defined by RCRA. Some characteristics of hazardous waste are toxicity, corrosiveness, ignitability and reactivity.

<sup>9</sup> At the time NMED was the New Mexico Environment Improvement Division before the Department became cabinet level in state government.

<sup>10</sup> A Part A RCRA permit is the general permit for a facility, and is typically only a few pages with little detail.

<sup>11</sup> A Part B RCRA permit for a facility is the operating permit, and has far more details and provisions than a Part A permit. Both parts are required for operations at a facility handling hazardous materials like LANL.

<sup>12</sup> Even though a dump receiving hazardous wastes is operating for the indefinite future it is still required under RCRA to have an approved closure plan in place.

<sup>13</sup> "General Information on Area G", [http://web.em.doe.gov/lfrg/lanl\\_facts.html](http://web.em.doe.gov/lfrg/lanl_facts.html)

<sup>14</sup> 1999 LANL SWEIS, Vol. II, pp. I-6 & I-7.