Northern New Mexico Citizens' Advisory Board Meeting
January 30, 2013
1:00 p.m. to 7:00 p.m.
Buffalo Thunder Resort, Caldera A Meeting Room
20 Buffalo Thunder Trail
Santa Fe, New Mexico 87506

AGENDA

Time	Action	Presenter
1:00 p.m.	Call to Order	Ed Worth, DDFO
	Establishment of a Quorum (11 needed) a. Roll Call b. Excused Absences	William Alexander
	Welcome and Introductions	Carlos Valdez, Chair
	Approval of Agenda Approval of Minutes of Sept. 26, 2012 Approval of Minutes of Dec. 4, 2012	
1:30 p.m.	**Public Comment Period**	
1:45 p.m.	Old Business a. Written Reports – See Packet Enclosures (5 minutes) b. EM-SSAB Draft Recommendations (4)	
2:00 p.m.	New Business	
2:15 p.m.	Items from DOE	Ed Worth
	Presentation of Long Term Strategy for Environmental Stewardship and Sustainability Plan	Michael Brandt
3:15 p.m.	**Break**	
3:30 p.m.	Presentation on Radiation and Health	NM Department of Health
4:20 p.m.	Presentation on Occupational Illness Compensation	Jim Ferguson
4:30 p.m.	Items from Liaison Members a. Los Alamos National Laboratory b. New Mexico Environment Department c. Environmental Protection Agency (Region 6) d. Department of Energy	 Jeff Mousseau John Kieling Ed Worth for Rich Mayer Pete Maggiore
5:00 p.m.	**Dinner Break**	
6:00 p.m.	**Public Comment Period**	
6:15 p.m.	Consideration and action on Draft Recommendation(s) to DOE	Carlos Valdez

- Draft Recommendation 2013-01, Recommendation for Action in Analysis of Disposal Pathways for Disposition of 33 Shafts: *Remote –Handled Waste Buried in 33 Shafts at Technical Area 54 (TA-54)*

6:45 p.m.	Wrap-up and Comments from Board Members	Carlos Valdez
7:00 p.m.	Adjourn	Ed Worth, DDFO

Northern New Mexico Citizens Advisory Board
1-30-2012

Thank you for all of your hard work and for representing the public of New Mexico regarding LANS. Without your guardianship and your voice, we are left out of the equation on the life and death issues that are LANL.
I am asking for recommendations to LANL. Secondly I am asking for information about long-term stewardship and recent or ongoing land transfers.

Bechtel, with a history of infractions regarding public welfare, always asks for the majority of its budget (97%) to go for nuclear weapons production. We know that there are 20,000 plutonium pits at Pantex and another 1500 a mile from the airport in Albuquerque. According to Lawrence Livermore National Laboratory, these "pits" will be "usable" for 150 years. There are also 13.1 metric tons of "surplus" plutonium pit material that must be disposed of. There are enough nuclear bombs, when one "pit" can kill 120,000 citizens in the blink of an eye (Hiroshima/Nagasaki). Today, one "pit" is even 10 times more powerful.
Even these "pits" are not "usable" when morality, international law, or human rights are taken into consideration. But Bechtel continues to make insane profits producing more weapons of mass destruction at the expense of public safety in New Mexico.
There is an enormous profit to be made in continuing to produce useless nuclear bombs and corporations have no conscience. Billions in profits is the bottom line.

It has recently come out that the PF-4 is extremely vulnerable to an earthquake. The Defense Nuclear Facilities Safety Board's (DNFSB) recent letter cites a 900 rem dose to the exposed population as a worse-case scenario in the event of a quake and resulting fire at PF-4. We know from past fires (Cerro Grande and Las Conchas) and independent monitoring that plutonium and other dangerous radionuclides have traveled in smoke at least as far as Truchas Peak. 900 rems is double the lethal dose expected to cause death to 50% of an exposed population within 30 days. This is shocking and an unacceptable situation.
New Mexico has seen 3 or 4 earthquakes in the past 2 years, two centered in Coyote and Tesuque, very near to Los Alamos. The devastating wildfire that came within 3.5 miles of TA-55 is another example of the high danger. Even though LANS has known of the deficiencies and danger to the public at least as far back as 2008, their priorities have been to pursue more funding for the proposed CMRR-NF to produce more nuclear bombs.
The sensible thing to do when so many of our lives are put at grave risk is to employ thousands of workers in a safe and complete cleanup of LANL. PF-4 must be dismantled and decontaminated. "The large plutonium inventory of PF-4, coupled with the facility's proximity to the public. creates the potential for very high offsite dose consequences if the building were to collapse" says the DNFSB. We cannot stand idly by when a catastrophe is in the wings. We cannot let for-profit LANS continue to endanger our lives in the pursuit of profit.

We, the public, do not have a voice. You are the Citizens Advisory Board. You have a responsibility to the public to influence the decision-making process on our behalf. Please recommend that the PF-4 be dismantled and cleaned up. Request that funding go to cleanup, not nuclear weapons production. It is urgent that you think outside the box and find a way to make a difference.

Secondly, in light of the fact that part of your mission is long-term stewardship, I would like information on the 1400 acres of LANL property that were scheduled to be transferred by the end of 2012 to the Pueblo of San Ildefonso and the National Parks. Also the 884 acres in Sandia Canyon included in this years planned transfers. I understand that NNMCAB members were very impressed with the Rocky Flats tour and the Office of Legacy Management. The trouble is, plutonium and other contaminants are invisible. To many people who live in the area, the Rocky Flats cleanup was a coverup, kind of like the "cap & cover", "hide & hope" plans by LANS. High levels of contaminants were left 3 feet under the surface. Rodents, insects, animals and erosion are bringing these long-lived contaminants to the surface where they blow in the wind to be inhaled by unsuspecting passers-by. Cancer levels in the area are phenomenal. Rather than cleaning up to background levels the level of cleanup was downgraded by converting the buffer zone to a Wildlife area. Long-term stewardship was transferred to an agency whose main concern and expertise is regarding invasive weeds, not lethal contamination. We can't let that happen here. I would like information on the specific levels of clean-up and the institutional controls that are being administered on these transferred lands and any others that have already been transferred.
Thank you for the opportunity to address you. I am providing a packet of information that I hope you will take the time to read.

Sincerely Jeanne Green
New Mexico concerned citizen

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 23, 2012

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: R.T. Davis and R.K. Verhaagen
SUBJECT: Los Alamos Report for Week Ending November 23, 2012

Plutonium Facility – Seismic Safety: LANL recently submitted a safety basis addendum to the site office that addresses the Unreviewed Safety Question associated with facility structural performance (see 10/19/12 weekly). Static non-linear seismic analysis performed by LANL earlier this year indicates that the probability of failure for multiple structural components exceeds the performance goal identified in the safety basis. The safety basis addendum identifies a worst case offsite consequence of approximately 900 rem for a seismic collapse scenario that includes spill, impact and fire release mechanisms. The addendum does not identify new controls or compensatory measures that mitigate the potential consequences for this accident scenario.

LANL has developed conceptual design upgrades for two vulnerable structural components, the basement captured columns and facility roof girders. The addendum indicates that upgrades for these components will be complete in FY 13 and FY 14, respectively. The LANL submittal provides responses to the steps identified under Exigent Circumstances in the DOE memorandum dated September 17, 2012 on Adequate Protection. Consistent with the DOE memorandum, NNSA will "specify a senior level of DOE approval authority for these circumstances, including a Program Secretarial Officer or higher (when appropriate) in consultation with its Central Technical Authority and the Office of Health, Safety and Security."

Weapons Engineering Tritium Facility (WETF): WETF engineers continue to identify pressure safety issues as a result of extent of condition reviews. Most recently, the following four noncompliances with pressure safety Technical Safety Requirements (TSRs) were identified: 1) compensatory measures for some pressure safety variances do not meet requirements; 2) some system components do not have adequately sized pressure relief devices installed; 3) some system components do not have any pressure relief device installed; and 4) preventative maintenance for some system pressure relief devices is not performed. Facility engineers noted during the critique that extent of condition reviews were almost complete and that all WETF systems will have been fully evaluated to ensure they meet pressure safety requirements in the very near future.

Area G Drum Venting System (DVS): LANL submitted, and the site office approved a Corrective Action Plan supporting the Federal Readiness Assessment (FRA) of DVS operations at Area G (see 10/26/12 weekly). In response, the site office developed and approved a plan of action for a limited scope FRA to evaluate closure of the initial prestart findings. This limited scope FRA will evaluate a select number of core functions based on performance during the original FRA and is scheduled to commence on December 10, 2012.

Certification Requirements Assessment: Earlier this month the Technical Area 55 (TA-55) Facility Operations Director declared a TSR noncompliance based on the failure of control room operators to meet all requirements for their two year re-qualification. In response, the site office has informed LANL that they will be conducting an assessment of certification requirements for operators and supervisors at TA-55. The assessment is scheduled to commence on December 3, 2012, with the overall objective of ensuring the respective Nuclear Facility Training Programs are effectively implemented.

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Washington, DC 20004-2901

January 3, 2013

The Honorable Steven Chu
Secretary of Energy
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Secretary Chu:

The Defense Nuclear Facilities Safety Board (Board) remains deeply concerned with the seismic safety posture of the Plutonium Facility (PF-4) at Los Alamos National Laboratory. The Board believes a recent analysis performed by the laboratory's contractor demonstrates that PF-4 is vulnerable to structural collapse. The large plutonium inventory of PF-4, coupled with the facility's proximity to the public, creates the potential for very high offsite dose consequences if the building were to collapse. Structural upgrades necessary to fix the PF-4 vulnerabilities are currently projected to take several years to complete. In the interim, the potential for very high dose consequences remains.

In 2009, the Board issued Recommendation 2009-2, *Los Alamos National Laboratory Plutonium Facility Seismic Safety*, to focus Department of Energy (DOE) and National Nuclear Security Administration (NNSA) management attention on the need to improve the seismic safety posture of PF-4. The Board acknowledges that seismic remediation measures have been taken at PF-4 since 2009; however, existing measures would be largely defeated by a collapse of the PF-4 structure. In response to the Board's Recommendation 2010-1, *Safety Analysis Requirements for Defining Adequate Protection for the Public and Workers*, the Deputy Secretary of Energy, in a letter dated July 19, 2012, established guidance for evaluating these types of situations where new information indicates the existing control strategy of a facility is no longer viable to keep postulated offsite consequences from exceeding the DOE Evaluation Guideline of 25 rem Total Effective Dose Equivalent. NNSA's contractor has submitted, and DOE Headquarters personnel are reviewing, an Addendum to the PF-4 Documented Safety Analysis that provides the information required by the Deputy Secretary.

Based on the developments outlined above, the potential for very high offsite dose consequences in the event of a seismically-induced collapse, and the amount of time it will take to address PF-4 structural vulnerabilities, the Board strongly urges DOE to implement additional near term measures to reduce the potential consequences of a seismically-induced collapse. Such risk reduction measures could include accelerated disposition of plutonium already designated as waste or surplus material, robust containerization of dispersible plutonium forms, and strengthened emergency planning and preparedness protocols and measures.

Therefore, pursuant to 42 U.S.C. § 2286b(d), the Board requests a report and briefing within 60 days of receipt of this letter that provides the DOE senior leadership assessment of the current state of public and worker protection for PF-4 seismic accident scenarios and the risk reduction measures to be applied to mitigate near term seismic risks.

Sincerely,

Peter S. Winokur, Ph.D.
Chairman

c: The Honorable Thomas P. D'Agostino
Mrs. Mari-Jo Campagnone

CCNS NEWS UPDATE

Runs 1/25/13 through 2/1/13

* 900 Rem Release from LANL Plutonium Facility Possible

The Defense Nuclear Facilities Safety Board recently reported that a worst-case scenario for the Plutonium Facility at Los Alamos National Laboratory (LANL) could result in a release of approximately 900 rems of radiation to a person located offsite. The scenario involves an earthquake that results in the collapse of the Plutonium Facility, a spill of radioactive material, and a fire that would release radioactivity into the environment. http://www.dnfsb.gov/board-activities/reports/site-rep-weekly-reports/los-alamos-week-ending-november-23-2012

The Nuclear Regulatory Commission (NRC) describes a lethal radiation dose as "[T]he dose of radiation expected to cause death to 50 percent of an exposed population within 30 days. Typically, the [dose] is in the range from 400 to 450 rem received over a very short time." http://www.nrc.gov/reading-rm/basic-ref/glossary/lethal-dose-ld.html The worst-case scenario 900-rem dose is roughly double the lethal dose.

The Board's report is based on a new seismic analysis of the Plutonium Facility, known as PF-4, prepared by the LANL scientists in September. The analysis is the latest in a series that have been done over the past two decades to understand the seismic hazard and to design the many fixes at PF-4. But it is unclear whether the fixes mitigate a lethal offsite dose.

In early January, the Board wrote to the Energy Secretary Chu about the possible collapse of PF-4. In the letter, the Board wrote "[t]he large plutonium inventory of PF-4, coupled with the facility's proximity to the public, creates the potential for very high offsite dose consequences if the building were to collapse." http://www.dnfsb.gov/board-activities/letters/board-issues-reporting-requirement-provides-doe-senior-leadership-assessmen

The large plutonium inventory is cause for concern as well as the underestimation of the seismic motions. The LANL scientists used ground motions of 0.5 gravity, or g, in their calculations of the seismic hazard. New research by Robert H. Gilkeson, a Registered Geologist and LANL whistleblower, reveals that the use of 0.5g underestimates the ground motions by at least half.

And the LANL scientists used a category 3 to determine the seismic design for

the structural upgrades to PF-4 rather than the more protective category 5. Buildings that are placed in the categories 3 through 5 must meet demanding design requirements, which are based on the earthquake return period. A longer return periods result in larger ground motions. For category 3 seismic designs, the return period is 10,000 years. For category 5 designs, the return period is 100,000 years, with larger ground motions. But the LANL scientists have used a return period of 2,500 years instead of the minimum required 10,000-year return period.

Joni Arends, of CCNS, said, "Please contact your elected officials and tell them that the threat of lethal doses of radiation to the public are too great. The nuclear weapons facilities at LANL must be shuttered now."

This has been the CCNS News Update. To support the work of CCNS, please make your tax-deductible contribution at our website at nuclearactive.org.

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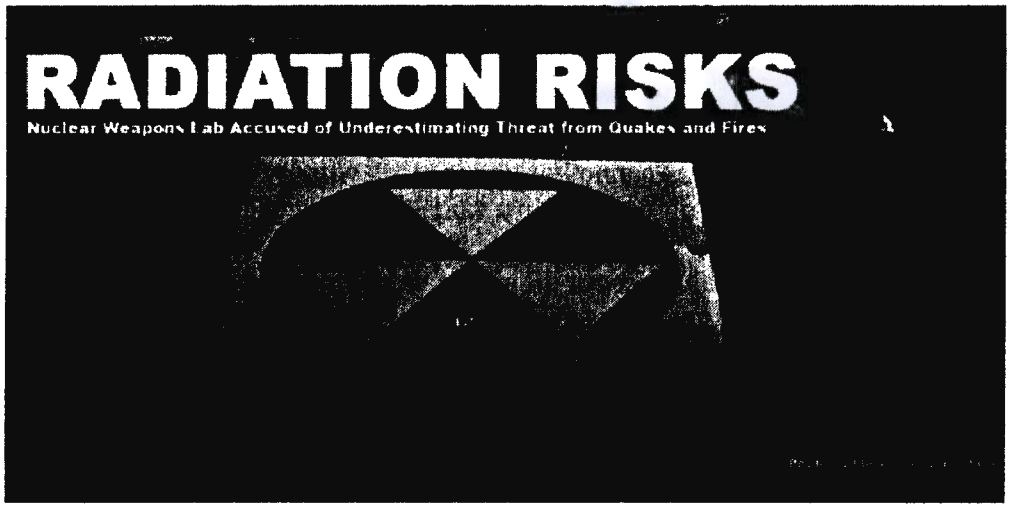
(505) 986 1973
www.nuclearactive.org

Jul 10, 2012 Project on Government Oversight

Nuclear Weapons Lab Underestimates Risk of Radiation Leak, Study Finds



By MIA STEINLE

One of the nation's main nuclear weapons labs has sharply underestimated the amount of radiation that could leak from the facility as a result of an earthquake, according to a federal advisory panel.

The radiation could be more than four times as intense as the Los Alamos National Laboratory predicted in a safety analysis last year, according to a recent report by the Defense Nuclear Facilities Safety Board.

The New Mexico laboratory's analysis included "multiple, substantial deficiencies," wrote Peter S. Winokur, chairman of the advisory board. The higher estimate calls for "additional safety controls" and "prompt action," he added.

The report's findings raise questions about the safety and reliability of Los Alamos, which says its work includes ensuring the safety and reliability of the U.S. nuclear weapons stockpile.

Analyses like the one in question "are fundamental elements for ensuring safe operations at defense nuclear facilities," Winokur wrote.

The Los Alamos facility is near geologic fault lines that show signs of past quakes, according to a 2007 "seismic hazard analysis" performed for the laboratory.

The advisory board's findings come at a time when nuclear weapons laboratories, which are managed for the government by private contractors, are pushing for greater freedom from oversight.

Former Los Alamos Director Robert Kuckuck said in written testimony to a House committee on June 27 that "burdensome" oversight at Los Alamos means that staff have "invented 'work-arounds' to avoid confrontation with the overseers," such as the advisory board. Kuckuck said he favored a legislative proposal that would downgrade the board's power.

Laboratory officials have complained that the government doesn't trust them. At a Senate subcommittee hearing in April, Penrose C. Albright, director of Lawrence Livermore National Laboratory, said that a major issue at the labs is "the unwillingness of the government to allow the people who they have actually hired to operate these facilities to make rational assessments of risk and operate the facilities and make the trades that they need to make in order to do the mission."

In contrast, the Government Accountability Office (GAO) has long put the contractor-run nuclear weapons labs on its list of "high risk" government programs. The GAO wrote in 2011 that the labs are "vulnerable to fraud, waste, abuse, and mismanagement" because federal oversight is inadequate.

The Los Alamos analysis in question, which was mandated by the government, focused on what would happen if an earthquake caused a fire at the New Mexico facility and thereby released radiation.

Following a federal guideline, Los Alamos was estimating the dose a "maximally-exposed offsite individual . . . at the site boundary" would receive if he or she stayed there and remained exposed for at least two hours, according to Winokur.

According to an advisory board document, the Los Alamos laboratory estimated that a person in that scenario could incur 23 rem total effective dose equivalent (TEDE)—a measure of the radiation absorbed by the human body and the resulting tissue damage.

However, the advisory board concluded that the dose would exceed 100 rem TEDE.

The laboratory's estimate was just below a Department of Energy "evaluation guideline" of 25 rem TEDE, the advisory board chairman wrote. A finding of more than 25 would require the laboratory to implement the highest level of safety controls the department can prescribe.The advisory board's estimate was at least four times that threshold.

In an interview, Winokur said the advisory board's estimate was "not meant to be a realistic assessment" of the impact on people in nearby communities.The potential health effects on actual populations were beyond the scope of the analysis, he said.

The radiation risk to workers at the site of a leak is usually higher than the risk to outsiders, he said.

According to a Nuclear Regulatory Commission fact sheet on the biological effects of radiation, exposure to greater than 50 rem has been associated with cancers of the

bladder, breast, colon, esophagus, liver, lung, ovaries, stomach and bone marrow, as well as leukemia.

Located about 35 miles outside of Santa Fe, the Los Alamos National Laboratory is the birthplace of the atomic bomb and was the site of deadly radiation accidents early in the nuclear age. It currently houses four metric tons of plutonium, according to the government. That is approximately as much plutonium as is contained in the nuclear weapon arsenals of Britain, China, France, India, Israel, and Pakistan combined, according to Hans M. Kristensen of the Federation of American Scientists.

The part of the Los Alamos laboratory that is the subject of the conflicting safety assessments, known simply as the "Plutonium Facility," manufactures nuclear weapon components called plutonium pits.

Los Alamos is operated by Bechtel Corp., University of California, Babcock & Wilcox Co., and URS Corp.

The Defense Nuclear Facilities Safety Board is a government panel that advises the president and the secretary of Energy about health and safety issues at defense-related nuclear facilities—as distinct from commercial nuclear power plants. Its criticism of the Los Alamos study is contained in a May 8 report by its staff and a June 18 letter from Winokur to Thomas P. D'Agostino, head of the National Nuclear Security Administration (NNSA), a semi-autonomous agency within the Department of Energy that oversees the weapons labs.

"The Board's staff identified multiple, substantial deficiencies of a non-conservative nature" in the Los Alamos analysis, Winokur wrote.

Los Alamos referred questions about the report to the NNSA, which did not respond to the Project On Government Oversight's requests for comment.

Though the dangers of earthquakes near nuclear facilities have received heightened attention since the 2011 Fukushima Daiichi disaster in Japan, the issue is not new to Los Alamos.The laboratory's focus on its own vulnerability to quakes goes back years.

In 2009, the advisory board said that the risk of fires induced by earthquakes at the Plutonium Facility required "immediate attention and action."

The board's recent report is part of its ongoing oversight of safety upgrades at the laboratory's Plutonium Facility. The report said that Los Alamos has completed some "near-term compensatory measures" over the past few years to reduce the risk of fires caused by earthquakes. The laboratory has also drawn up a long-term plan for additional upgrades to ventilation and fire suppression systems, the report said.

In his written response to POGO Winokur said the timeline for installing "seismically qualified" ventilation and fire suppression systems "extends to 2020."

Both the Los Alamos and advisory board radiation leakage projections represent marked improvements from an earthquake and fire safety analysis Los Alamos performed in 2008. That study predicted "a mitigated offsite dose consequence" of more than 2,000 rem TEDE, according to the new advisory board report.

In the report, the board detailed several alleged errors in the laboratory's 2011 safety analysis.

For example, the board said the laboratory erroneously assumed that walls consisting of "gypsum board panels"—an apparent reference to drywall—would remain intact after an earthquake.

"Inappropriately relying on laboratory walls to perform functions that they are not credited or qualified to perform" potentially underestimates the amount of radiation that would leak, the report said.

The board also found that the laboratory did not adequately consider the presence of combustible material in the facility. For example, the board said that the basement at the Plutonium Facility houses both combustible material and electrical panels that are not programmed to shut off in the event of an earthquake. Though the two could combine to ignite a fire in the basement, the laboratory assumed that that risk was "not credible," the board said.

Additionally, the board said gloveboxes at the facility—airtight boxes in which laboratory workers handle plutonium—feature shielding made of combustible material. The laboratory did not fully account for the flammable shielding, the report said.

The board also accused the laboratory of underestimating the quantity of fine, "respirable" plutonium powder that would be released into the air. The board said the laboratory based its calculations on "an arbitrary factor" and the resulting estimate "cannot be technically justified."

The laboratory considered only one fire breaking out in the aftermath of an earthquake even though the Plutonium Facility could be threatened by multiple fires breaking out simultaneously, the board said.

The board said that "for one accident the mitigated dose consequences to the public exceed 100 rem total effective does equivalent (TEDE), which would require additional safety controls for the facility."

This isn't the first time the board has accused the nuclear weapons laboratory of basing a safety analysis on incomplete information and a faulty process.The report noted that the board raised similar concerns in a 2008 letter to the agency that oversees the nuclear weapons laboratories.

Nor is the risk of a fire near Los Alamos strictly hypothetical. Last summer, the laboratory was threatened by what the Associated Press called the largest fire in New Mexico history.

Mia Steinle is a POGO investigator. Image by Flickr user primatage.

PUBLICCITIZEN Protecting Health, Safety and Democracy

Bechtel: Profiting from Destruction

U.S. Taxpayers Blindly Funding Post-War Corporate Profiteering and Cronyism, Public Interest Groups Say

SAN FRANCISCO, Calif. — Bechtel Group Inc., one of the lead contractors in the reconstruction of Iraq, has a 100-year history of capitalizing on environmentally unsustainable technologies and reaping immense profits at the expense of societies and the environment, said a report released today by Public Citizen, Global Exchange and CorpWatch.

A historical look at Bechtel's wrongdoings includes:

• In Papua New Guinea, Bechtel partnered in constructing the world's largest gold mine in 1970. The mine daily dumps hundreds of thousands of tons of toxic waste from the mining operations directly into local rivers. In 2000, a waste dump accident resulted in four deaths.

• Environmental and human rights groups have charged that Bechtel, in a partnership with Shell called InterGen, circumvented U.S. environmental laws by building a power plant on the Mexican border for the sole purpose of exporting energy to the United States. The La Rosita InterGen plant located in Mexicali, Baja Calif., and partly owned by Bechtel, was the subject of a May 6, 2003, court ruling that found that the U.S. Department of Energy and Bureau of Land Management had acted illegally in granting permits to InterGen to build this power plant.

• In Cochabamba, Bolivia, in 1999, Aguas del Tunari, a subsidiary of Bechtel, provoked protests that shut down the city when it privatized the city's water system, then implemented massive price hikes that left many people unable to afford water. The United Nations has formally declared water to be a human right - Bechtel violated this international resolution when it deprived people of their right to water. The outcry forced the Bolivian government to cancel Bechtel's contract; Bechtel is now suing the country in a World Bank court for $25 million in lost profits.

• At nuclear power plants in Palisades, Mich.; Humboldt Bay, Calif.; Three Mile Island, Penn.; San Onofre, Calif., and Davis-Besse, Ohio, Bechtel was involved in some of the U.S. commercial nuclear industry's more notable mishaps.

• In Nevada, Bechtel was awarded the management contract for a proposed nuclear waste repository at Yucca Mountain, a site considered sacred by the Western Shoshone people and part of a decades-long land dispute between the United States government and the

Native Americans. On these same lands, Bechtel manages a Nevada test site and counterterrorism facility where nuclear, biological and chemical weapons construction and testing are carried out. The operation of the facility and its environmental and health effects have prompted ongoing protests from Native Americans, environmental and disarmament advocates.

• In Boston, Bechtel's mismanagement and cost overruns have been unprecedented. Bechtel designed and manages the Boston Central Artery tunnel project, also known as "the Big Dig." This federally funded project is the most costly civil engineering undertaking in U.S. history; estimated at $2.5 billion in 1985, it reached $14.6 billion in 2003.

?In San Francisco in 2002, the Board of Supervisors phased out a contract with Bechtel for the management of the upgrade of the city's water systems before its completion date. Bechtel was charged with doing unnecessary and overpriced work and charging the city for tens of thousands of dollars' worth of personal expenses.

The report also documents Bechtel's history in Iraq, where the company was pushing for an oil pipeline deal in the 1980s at the same time that Saddam Hussein was committing his worst atrocities against the Iraqi people. Bechtel was named by Hussein's government as one of the U.S. companies that provided it with materials that could be used to make weaponry.

"Bechtel has demonstrated brazen moral corruption by first contributing to the development of Iraq's weapons, then pushing for a war against Iraq, and finally profiting from the tragedy and destruction wrought by that war," said Andrea Buffa, peace campaign coordinator at Global Exchange. "It is a textbook example of what war profiteering looks like. This report answers the question – 'What's wrong with Bechtel?' "

The full report is available at http://www.citizen.org/documents/profilebechtel.pdf.

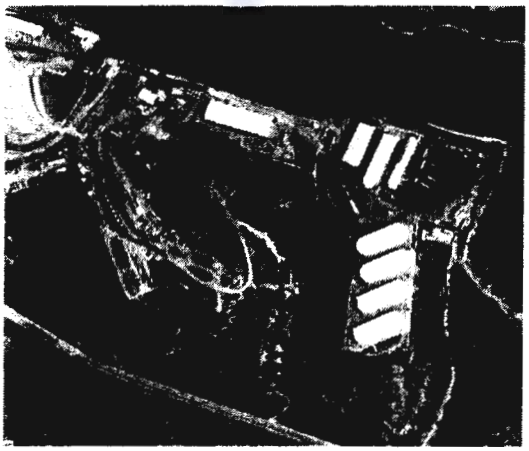
nuclear watch new mexico

Clean Up, Don't Build Up Nuclear Weapons Programs! Hundreds of Jobs Could Be Created that Protect the Environment

Summary: New Mexicans should push their politicians to vigorously lobby for comprehensive cleanup at LANL. Unlike nuclear weapons programs, cleanup would be a win-win that permanently protects the environment and creates hundreds of high paying jobs. Specifically, the NM Environment Department should be pressured to NOT condone the *de facto* creation of a permanent nuclear waste dump by signing off on "cap and cover" of an estimated 18 million cubic feet of radioactive wastes at LANL's Area G. Instead, NMED should require full characterization and excavation of the wastes; the possible safe recycling of some materials; offsite disposal of any high-level or transuranic radioactive wastes; and the reburial of remaining low-level radioactive wastes in a modern landfill with liners, in stark contrast to today's direct burial in dirt.

Political and Regulatory Background: In part because of jobs, the New Mexican congressional delegation supports the proposed new Chemistry and Metallurgy Research Replacement Project (CMRR) at the Los Alamos National Laboratory (LANL). The CMRR's primary purpose is to quadruple the production of plutonium pit triggers for nuclear weapons to up to 80 per year. The sad fact is, as the government's own documents explicitly state, **the CMRR's exorbitant investment of up to 6 billion taxpayer dollars will NOT produce a single new permanent job** (instead it would merely relocate existing jobs). In contrast, **comprehensive cleanup of Area G, the Lab's biggest radioactive dump, could create hundreds of high paying jobs for decades while permanently protecting the environment.**

In 2005, following difficult negotiations and lawsuits by the federal government against New Mexico, the U.S. Department of Energy (DOE) signed a legally binding Consent Order demanded by the state Environment Department that stipulated extensive milestones on the road to comprehensive cleanup at LANL. In part, the Lab is required to remove the large fabric air buildings at Area G which house plutonium-contaminated bomb wastes destined for disposal at the Waste Isolation Pilot Plant (WIPP) in southern New Mexico. However, Governor Martinez's administration has agreed to give two-year extensions to more than 30 milestones when the Consent Order itself is set to expire at the end of 2015. This scheme includes prioritizing accelerated shipments of above-ground WIPP wastes while allowing the Lab to renege on its other cleanup milestones. NMED gave away the store because in this case "accelerated" only means catching back up to what LANL was previously required to do.



Area G, with the visible current pits and shafts for "low-level" radioactive wastes to the left and fabric buildings on the right for storing transuranic plutonium bomb wastes destined for WIPP in southern NM.

Nevertheless, federal budgets constraints are being used as the pretext for forcing the false choice between accelerated WIPP shipments or the cleanup of buried contaminated wastes. However, one of the primary purposes of the Consent Order to begin with was to compel LANL to seek adequate funding for cleanup, instead of just nuclear weapons. The Martinez Administration has preemptively surrendered the state's leverage while accommodating LANL.

Some technical aspects of Area G: Because it reportedly contains 18 million cubic feet of radioactive wastes, thought to be 80% of LANL's currently buried inventory, comprehensive cleanup of Area G would be tantamount to comprehensive cleanup of the Lab itself. LANL claims that Area G is just a "low-level" radioactive waste dump under legal definitions. However, in reality some low-level wastes can be more radioactive that the WIPP-bound plutonium-contaminated "transuranic" wastes. Furthermore, Area G began operations in 1957, long before the advent of environmental laws and decent record keeping. Therefore the contents of Area G are in part unknown - - there could be both buried high-level and transuranic radioactive wastes. In all cases, boxes, drums and containers of radioactive wastes were dumped directly into unlined pits and shafts. DOE has always resisted, not only at LANL but all across the country, disposing of radioactive wastes in modern landfills with multiple liners and leachate collection systems. This is especially outrageous given that NMED will not allow any county or municipality in this state to get away without modern landfills, yet **DOE and the Los Alamos and Sandia National Labs continue to dump radioactive wastes directly into New Mexican soil.**

What LANL wants: The Lab narrowly limited its analyses of remediating Area G to two methods, with estimated costs, timelines and worker-hours. The first method LANL proposed is evapotranspiration cover (or "**cap and cover**"), costing $386 million. This would take three years to build, followed by 30 years of monitoring and vapor extraction and a century of "institutional controls" (i.e. fences). In all this would require an estimated 424,000 worker-hours to construct a cover of 51 acres and maintain it for 30 years, **but leaves all of the wastes in place!**

The second method the Lab analyzed is full excavation of more than 100 pits and shafts, with off-site waste disposal and excavated areas backfilled with clean material, costing $29 billion. This would take 30 years to complete, requiring an estimated 108 million worker-hours. However, we believe that when the Lab wants to do something (like the CMRR) it lowballs the price; but when it does NOT want to do something (like fully cleanup Area G) it dramatically highballs the costs. There is no mystery as to what the LANL wants, as it has made explicitly clear that it wants **cleanup on the cheap with cap and cover so that it can declare Area G "cleaned up."** In contrast, plutonium-239, LANL's material of choice for nuclear weapons research and production, remains an environmental threat for its ten half-lives (240,000 years).

What Nuclear Watch NM wants: The method and degree of completeness of required Area G cleanup is yet to be determined by NMED. **Public participation will be vital!** The Environment Department must approve whatever LANL proposes following a public comment period. The Lab rejected our preferred alternative, which is full characterization and excavation of the wastes; the possible safe recycling of some buried materials; offsite disposal of any high-level or transuranic radioactive wastes; and the reburial of remaining low-level radioactive wastes in a modern landfill with liners, in stark contrast to today's direct burial in dirt.

This is not ideal. The complete removal of waste would be better, but we fear that complete off-site disposal is simply cost-prohibitive, especially in today's fiscal climate. But in any case, the Lab should not be allowed to get away with just cap and cover (perhaps better put as "hide and hope"). There should be a middle alternative that protects our precious but limited water resources while creating well-paying jobs, a real win-win for New Mexicans and the environment.

Real security demands a clean environment and sustainable jobs. Cleanup, don't build up nuclear weapons programs! Create jobs for New Mexicans that protect the environment!
Don't let LANL "clean up" on the cheap through cap and cover!

Nuclear Watch NM is grateful to the New Mexico Community Foundation, whose generous support made the research and production of this fact sheet possible. *September 2012*

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For Immediate Release 12/6/12

Plutonium in Warhead Cores ("Pits") Stable to 150 Years
Aging Tests at Nuclear Weapons Lab Extend Earlier Results, Increasing Confidence
Results Highlight Lack of Need for New Pit Production Facility

Contact: Greg Mello, 505-265-1200 (office), 505-577-8563 (cell)

Scientists at Lawrence Livermore National Laboratory (LLNL), using peer-reviewed protocols, have determined that plutonium in the fissile core of nuclear weapons is stable for at least 150 years.

A short description of these studies and their policy context can be found in this month's issue of LLNL's *Science and Technology Review* ("Plutonium at 150 Years: Going Strong and Aging Gracefully," by Arnie Heller, pdf).

The article was brought to our attention this morning by our colleagues at Princeton's Program on Science and Global Security, with whom we have closely collaborated on pit policy issues this past decade.

The peer review for the protocols used in these continuing experiments, as well as the widely-cited interim results showing that U.S. pits last at least 85 years, can be found in a November 20, 2006 review by the JASON defense consultants (*"Pit Lifetime,"* pdf, JSR-06-335, The Mitre Corporation).

These new conclusions, like those of 2007, are based on multiple methodologies: naturally aged plutonium samples, artificially aged plutonium samples, and theory. Accelerated pit aging experiments began in 1997 in response to concerns expressed by the JASONs and many other parties, including the Los Alamos Study Group.

The Study Group requested clarification of pit aging phenomena and their implications for reliability and infrastructure investment in a letter to Secretary O'Leary in October of 1996 (pdf), given the statements made to us that year by senior Los Alamos National Laboratory (LANL) officials that '"LANL has found no aging phenomena which would significantly decrease pit performance in the first few decades of pit life, assuming there are no design errors or manufacturing defects.'"

In 1996, as we wrote then, "'the first few decades'" was the outer envelope of confident pit life. By 2002 it was 45-60 years. By 2007 it was at least 85 years. Now it is 150 years.

While pits contain other shell(s) made of other materials, some of which could in principle corrode or otherwise degrade, only the two plutonium hemishells need be manufactured and joined in a plutonium facility. Pits can be otherwise assembled and the more peripheral components exchanged in far less expensive facilities, as was done at the Rocky Flats Plant. (As far as we know, no such pit repairs are needed or planned. The Pantex nuclear weapons plant near Amarillo, TX, has a pit requalification work station in which the outer layer of the pit can be removed for inspection and replaced if needed.) Thus it is the aging of the plutonium components themselves, not anything else, which is germane to plutonium infrastructure decisions.

Study Group Director Greg Mello: "Taken together with other information, this new finding has a number of important implications. These include:

- The probability of prior results being mistaken (despite the extensive peer review they had) and therefore of acute pit failure, is now lower than ever.
- Pit production for the stockpile is not needed, unless somehow a grossly uneconomical scheme is devised in which the present inventory of roughly 5,000 backup pits, beyond the roughly 5,000 pits now in the nuclear stockpile, is deemed insufficient. [For stockpile pit inventory and other details see U.S. Plutonium "Pit" Production: Additional Facilities, Production, Restart are Unnecessary, Costly, and Provocative, pdf. Extensive further resources can be found at http://www.lasg.org/CMRR/open_page.htm.]
- Such a cockamamie scheme indeed has been devised. It is the so-called W78/W88 Life Extension Project, including a large build of new "hedge" warheads. It may not endure, politically or managerially. Let us hope not.
- Barring such artificial, created "needs," no large new plutonium pit manufacturing capability is needed to maintain an

extremely large, diverse nuclear stockpile for the foreseeable future -- for generations.

- For sound reasons, the U.S. has signed a binding treaty promising complete nuclear disarmament: the Treaty on the Non-Proliferation of Nuclear Weapons (NPT).
- It would be counterproductive to plan or design for such a large facility now because the planning and design bases would change so much prior to any necessity for construction that the effort would need to be updated again and again.
- In today's world, national security threats from other sources have eclipsed the unique and nearly absolute claim nuclear weapons once had on appropriations. In our view, the most important of these is climate change and the severe weather, heat, and drought it is bringing. Whatever one's views regarding threats may be, misallocation of tens of billions of dollars -- which is what a program of pit production and fielding of new-pit warheads involving new-made plutonium pits would cost -- would have very serious national security impacts.
- These results are being reported by LLNL, not LANL, and they are only being reported now. Until this year, LANL was to financially benefit from $6 billion in new construction primarily justified for its role in supporting pit production. LANL still seeks billions in new plutonium infrastructure investment, beginning later this decade.
- We very much doubt LANL"s ability and willingness to reveal important national security science results that do not support LANL's financial bottom line.
- The plutonium laboratory which is producing these results is slated to be downgraded from a secure nuclear facility under current National Nuclear Security Administration (NNSA) plans. This would leave LANL as the sole arbiter of pit aging.
- These results have been generated continuously. We have inquired about them, and congressional staff who have requested briefings on them have told us that the results of these continuing aging experiments were more than confirmatory of the reported 2007 findings. Why were these evolving results withheld until now, instead of being released, say, annually?
- It cannot be emphasized enough that rising threats to our very survival require our full political and fiscal attention. Livermore's scientists have done the nation a great service by publishing these results, belated though they be."

ENDS

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^ back to top

2901 Summit Place NE Albuquerque, NM 87106, Phone: 505-265-1200

A dozen reasons why the Rocky Flats National Wildlife Refuge should remain closed to the public

Prepared by LeRoy Moore, PhD, Rocky Mountain Peace & Justice Center, December 2010

After completion of the "cleanup" of the 6,500-acre site of the defunct Rocky Flats nuclear bomb plant, about three-fourths of the site (roughly 7 square miles) was transferred from the Department of Energy to U.S. Fish & Wildlife Service to operate as a wildlife refuge. DOE retained 1,300 more contaminated acres (about 2 square miles) surrounded by the FWS land.

1. Long-term danger of plutonium, the contaminant of concern
Plutonium 239, the contaminant of principal concern at Rocky Flats, has a half-life of 24,110 years. It remains dangerously radioactive for more than a quarter-million years. Any quantity left in the environment poses an essentially permanent danger.

2. Plutonium's lethal quality
The alpha radiation emitted by plutonium cannot penetrate skin. But tiny particles inhaled, ingested, or taken into the body through an open wound may lodge in the lungs or migrate to bone. For as long as it resides in the body it bombards surrounding tissue with radiation. The result may be cancer, harm to the immune system or genetic abnormalities.

3. Hazardous in very small amounts
Plutonium particles of 10 microns or smaller can be inhaled. One micron is 1/millionth of a meter, a meter being 39.37 inches or slightly longer than a yard. For further comparison, the average diameter of a human hair is about 50 microns. Meteorologist W. Gale Biggs found that airborne particles at Rocky Flats "are probably smaller than 0.01 microns." Researchers at Columbia University demonstrated that a single plutonium particle induces mutations in mammal cells. Cells receiving very low doses were more likely to be damaged than destroyed. Replication of these damaged cells constitutes genetic harm that can become cancer, and more such harm per unit dose occurs at very low doses than would occur with higher doses.

4. Extent of contamination at Rocky Flats unknown
Fires, accidents, routine operations, and random dumping during production years released plutonium particles to the environment. The prevailing wind heads east and southeast, but it blows in all directions some of the time. Hence, plutonium was scattered across the whole of the nearly 10 square-mile site. No one knows the full extent of the contamination because this was not determined. The methods used to locate plutonium could have missed hot spots.

5. The difference between the cleanup the public sought and what it got
In 1995 the single most widely supported cleanup recommendation from the public called for eventual cleanup to average background radiation levels, with initial cleanup to go as far in this direction as current technology allows while making the site a lab for development of technology to do better. Neither happened. Instead, the cleanup finally agreed to by DOE, EPA and CDPHE in 2003 allowed in the top 3 feet of soil a quantity of plutonium up to 1,250 times average background levels, with much more allowed at 3 to 6 feet below the surface and no limit on the quantity of plutonium allowed at a depth of 6 feet or more.

6. Dollars and date, not public health, drove the cleanup
DOE and its contractor, Kaiser-Hill, made a secret deal with Congress to close Rocky Flats by a fixed date for a fixed sum. Tailoring the cleanup to fit these limits, they rejected appeals from some in the public that they seek more funds to do a better job. Of the $7 billion allotted to close the site by December 2006, no more than $473 million (about 7%) could be spent on actual remediation of the environment. Kaiser-Hill received $560 million for its work.

7. Local people rejected both the cleanup and recreation at the wildlife refuge
Of the individuals and organizations that commented on the final Rocky Flats Cleanup Agreement adopted in June 2003, 85.6% rejected the plan as inadequate, due mainly to the plutonium being left behind. 81% of those who commented on FWS plans to open the wildlife refuge to public recreation opposed the idea. These comments are part of the public record.

8. Plutonium not stable in the environment
EPA and CDPHE claim that there is no pathway by which plutonium left in soil at Rocky Flats can reach human subjects. This is refuted by a 1996 study in which ecologist Shawn Smallwood shows that 18 species of burrowing animals present at Rocky Flats that dig down to as much as 16 feet constantly redistribute soil and its contents. In a wholly random way they will bring buried plutonium to the surface where tiny particles can be transported near and far by wind and made available to be internalized by unwitting humans. In any given year burrowing animals disturb as much as 10 to 12% of surface soil on the site. Though this study was done in 1996 EPA and CDPHE ignored it when in 2003 they approved the final cleanup plan for Rocky Flats.

9. The cleanup does not protect the most vulnerable, especially children
The "risk-based cleanup" at Rocky Flats was calculated to protect a wildlife refuge worker, that is, a physically active adult in good health. The cleanup was not designed to protect the very young, the very old, the infirm. FWS expects children to visit the wildlife refuge. The human child, without question, is the most vulnerable to plutonium exposure of all creatures, because a child is likely to stir up dust, to eat dirt, to breathe in gasps, or to scrape a knee or elbow, all ways of taking plutonium into the body. Once internalized, the material integrates with the child's tissue development and wreaks havoc within the child's body for the duration of her or his life. Playing with plutonium is a dangerous proposition.

10. EPA and CDPHE mislead the public when they say Rocky Flats is "safe"
The National Academy of Sciences report on *Health Risks from Exposure to Low Levels of Ionizing Radiation* (2006) affirms that exposure to any level of ionizing radiation is potentially harmful. In 2004 British researchers concluded that cancer risk from exposure to very low doses of plutonium may be ten or more times more dangerous than allowed by existing official standards for permissible exposure.

11. **The same agencies oppose informed consent for visitors to the wildlife refuge**
State Representative Wes McKinley was foreman of the grand jury that spent nearly 3 years reviewing evidence of alleged environmental lawbreaking at Rocky Flats collected by the FBI in its 1989 raid on the plant. 65 cartons of documents from this investigation remain sealed in the Denver federal courthouse; they were never examined by EPA and CDPHE, regulators of the Rocky Flats cleanup. McKinley is under court order not to reveal what he learned about conditions at Rocky Flats, but he objects to opening the wildlife refuge to the public. His efforts to get informed consent regarding risk at the refuge for potential refuge visitors have been opposed by the very agencies that made no effort to determine whether the 65 cartons in the federal courthouse contain data pertinent to the Rocky Flats cleanup.

12. **Genetic effects of plutonium on wildlife are poorly understood**
Genetic effects on a given species may be so subtle that they cannot be easily detected until generations later when harm is irreversible. Any harm to wildlife at Rocky Flats will not be confined to the bounds of the site. Deer from the site have been shown to have plutonium in their bodies.

For documentation, see "Plutonium and People Don't Mix" and "Rocky Flats: Bait and Switch Cleanup" at http://www.rockyflatsnuclearguardianship.org/leroy-moore/papers-by-leroy-moore-phd-2/

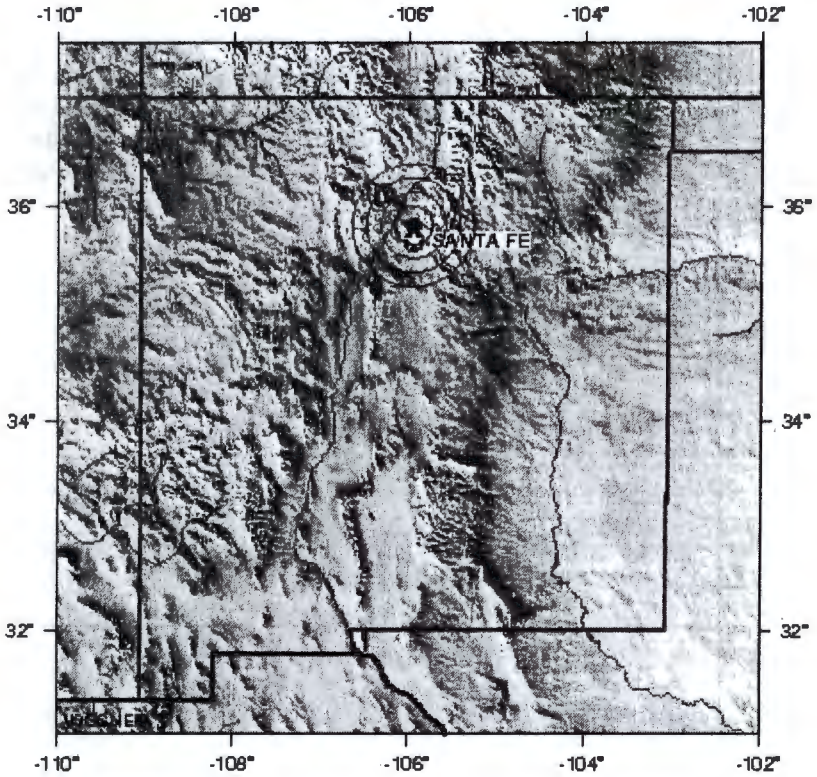
UPDATED: Light Earthquake Strikes Near Los Alamos Lab

By The Associated Press on Mon, Oct 17, 2011 A magnitude 3.8 earthquake has struck around 20 miles from Los Alamos National Laboratory.

The U.S. Geological Survey says the light temblor hit after 10:30 a.m. on Monday. It was centered nine miles north of Santa Fe and hit around 19 miles southeast of Los Alamos National Laboratory. It also had a depth of around .7 miles....

New Mexico shaken by 'historically unusual' 3.8 magnitude earthquake

Posted on October 18, 2011 by The Extinction Protocol



NEW MEXICO

2011 10 17 16:38:50 UTC 35.83N 105.95W Depth: 1.1 km

Earthquake Location

October 18, 2011 – SANTA FE – A 3.8 magnitude earthquake "is unusual for this area, historically," Richard Aster, a professor of Geophysics at New Mexico Institute of Mining and Technology, wrote the New Mexican in an email Monday. "The present estimate of the epicenter is about half way between Santa

Fe and Espanola. This is a large enough event that there may be felt aftershocks." ... in New Mexico, 3.8 is a major event. There were the two earthquakes around Socorro in 1906, including one in November of that year that shook four chimneys and plaster off the Socorro County Courthouse and a cornice fell on the northwest corner of the two-story adobe Masonic Temple was thrown onto its first floor. More recently, there was a 5.0 quake 25 miles west of Raton and a 4.2 magnitude temblor on Dec. 19, 2005 near Carlsbad, according to the U.S. Geological Survey. It appears the largest quake was a 5.1 trembler near Dulce in 1966.

Coyote Earthquake Risk Grade

The USGS database shows that there is a 22.465% chance of a major earthquake within 50 miles of Coyote, New Mexico within the next 50 years. The largest earthquake within 50 miles of Coyote, New Mexico was a 4.5 Magnitude in 1973.

Probability of earthquakes within the next 50 years Within 31 Miles / 50km above magnitude

Magnitude Probability
5.0 22.465%
5.1...19.453%
5.2...16.870%
5.3...14.648%
5.4...12.754%
5.5...11.148%Historical Earthquake Data (Within 50 Miles)

Earthquake Colorado / New Mexico, USA – continuing aftershocks in the Trinidad / Raton area

Last update: September 16, 2011 at 4:40 pm by By Armand Vervaeck and James Daniell

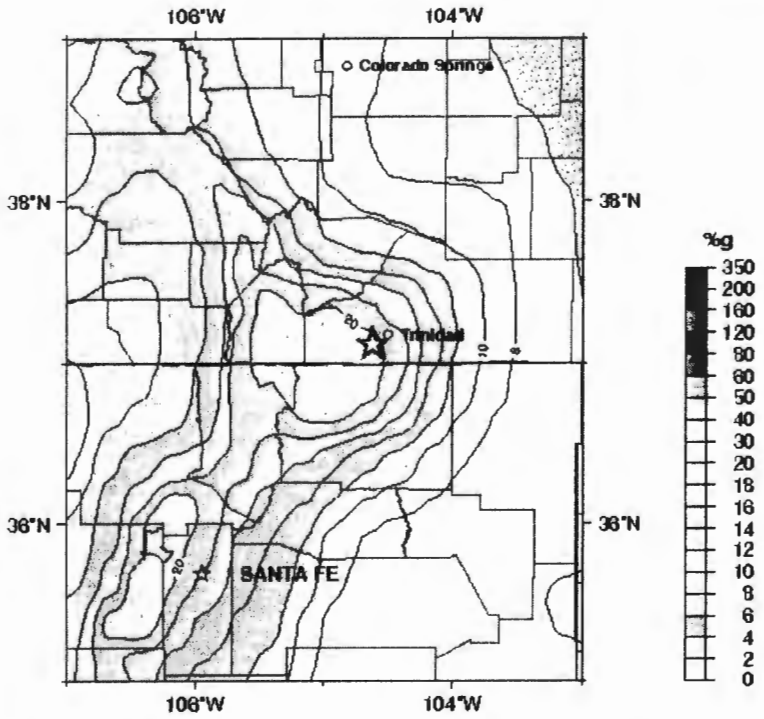
Earthquake overview : After having experienced a foreshock with a magnitude of 4.6 at 5:30 PM on August 22, a second strong mainshock measuring 5.3 magnitude (5.5 initially reported) scared the Trinidad, Raton area.

UPDATE 16/09 – 16:40 UTC :
M 3.8 2011/09/16 14:51 Depth 5.0 km NEW MEXICO / COLORADO
08:51:51 AM at epicenter
The xx th **aftershock** after the August 23 earthquake.
29 km (18 miles) W of **Raton**, New Mexico and 39 km (24 miles) SW of **Trinidad**,

UPDATE 13/09 – 15:00 UTC : A total of **5 aftershocks** have hit the Colorado / New Mexico area

Their magnitudes, depths and epicenters :

M 2.6	**2011/09/13 13:13**	**Depth 5.0 km**	**NEW MEXICO**
M 2.5	**2011/09/13 05:46**	**Depth 4.9 km**	**COLORADO**
M 4.0	**2011/09/13 05:24**	**Depth 5.0 km**	**NEW MEXICO**
M 2.6	**2011/09/13 02:59**	**Depth 9.0 km**	**NEW MEXICO**
M 3.4	**2011/09/13 01:37**	**Depth 6.8 km**	**NEW MEXICO**



http://earthquake-report.com/2011/08/23/unusually-strong-earthquake-in-colorado-new-mexico-united-states/

http://www.homefacts.com/earthquakes/New-Mexico/Santa-Fe-County/Tesuque-Pueblo.html

Tesuque Pueblo Earthquake Risk Grade

The USGS database shows that there is a 30.829% chance of a major earthquake within 50 miles of Tesuque Pueblo, New Mexico within the next 50 years. The largest earthquake within 50 miles of Tesuque Pueblo, New Mexico was a 4.5 Magnitude in 1973.

Probability of earthquakes within the next 50 years

Within 31 Miles of Tesuque / 50km above magnitude

Magnitude Probability

5.0…29.289%, 5.1…25.590%, 5.2…22.377%, 5.3…19.589%, 5.4…17.194%, 5.5…15.148%

Historical Earthquake Data (Within 50 Miles)

All distances and depths in the table below are measured in miles.

Date, Distance , Magnitude, Depth
10/17/2011, 7.53, 3.5, 5
07/19/2011, 33.80, 2.7, 5
02/07/2011, 21.12, 2.7, 5
08/15/2007, 20.40, 3, 5
03/17/1973, 27.43, 4.5, 6

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700 Washington, D.C. 20004-2901
(202) 694-7000

October 26, 2009

The Honorable Steven Chu
Secretary of Energy
U. S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Secretary Chu:

On October 26, 2009, the Defense Nuclear Facilities Safety Board (Board), in accordance with 42 U.S.C. § 2286a(a)(5), unanimously approved Recommendation 2009-2, *Los Alamos National Laboratory Plutonium Facility Seismic Safety*, which is enclosed for your consideration. This Recommendation identifies the need to execute both immediate and long-term actions that can reduce the risk posed by a seismic event at the Plutonium Facility at Los Alamos National Laboratory.

After you have received this Recommendation and as required by 42 U.S.C. § 2286d(a), the Board will promptly make it available to the public. The Board believes that this Recommendation contains no information that is classified or otherwise restricted. To the extent that this Recommendation does not include information restricted by the Department of Energy (DOE) under the Atomic Energy Act of 1954, 42 U.S.C. § § 2161-2168, as amended, please arrange to have it placed promptly on file in your regional public reading rooms. The Board will also publish this Recommendation in the *Federal Register*.

The Board will evaluate DOE's response to this Recommendation in accordance with the Board's Policy Statement 1, *Criteria for Judging the Adequacy of DOE Responses and Implementation Plans for DNFSB Recommendations*.

Sincerely,

John E. Mansfield, Ph.D.
Vice Chairman

Enclosure

c: The Honorable Thomas P. D'Agostino
Mr. Donald L. Winchell, Jr.
Mr. Mark B. Whitaker, Jr.

RECOMMENDATION 2009-2 TO THE SECRETARY OF ENERGY
Los Alamos National Laboratory Plutonium Facility Seismic Safety
Pursuant to 42 U.S.C. § 2286a(a)(5)
Atomic Energy Act of 1954, As Amended

Dated: October 26, 2009

Background

The Defense Nuclear Facilities Safety Board (Board) is concerned about the potential consequences of seismic events at Los Alamos National Laboratory's (LANL) Plutonium Facility and the adequacy of the safety strategy currently being pursued to address these events. In particular, the mitigated offsite consequences predicated on a seismically induced large fire at this operating nuclear facility exceed the Department of Energy's (DOE) Evaluation Guideline by more than two orders of magnitude. The Board believes this situation warrants immediate attention and action.

The Plutonium Facility has operated for more than a decade with a 1996 Final Safety Analysis Report as its safety basis. DOE issued Title 10, Code of Federal Regulations, Part 830, *Nuclear Safety Management*, in January 2001, requiring contractors for all its existing facilities to submit a Documented Safety Analysis (DSA). Ultimately, a DSA for the Plutonium Facility was submitted by LANL and approved by the National Nuclear Security Administration's (NNSA) Los Alamos Site Office (LASO) through a Safety Evaluation Report (SER) in December 2008. The DSA identifies an array of planned future upgrades to improve the safety posture of the facility. However, both the DSA and SER rely inappropriately on planned seismic upgrades to safety systems that (1) will not be implemented for many years and (2) are not sufficient to address adequately the bounding seismic accident scenarios. The only safety feature that can be credited for these accident scenarios is the passive confinement provided by the facility structure. Additionally, appropriate compensatory measures to protect public and worker health and safety have not been identified. As a result, a major deficiency in the facility's safety basis exists.

The safety strategy approved by LASO is based on the assumption that future upgrades to reinforce the support stands for a limited set of "high-risk" gloveboxes (including those containing ignition sources, such as furnaces) will prevent a large fire from occurring after a seismic event. While planned seismic upgrades to high-risk gloveboxes will provide some safety benefit in the future, the Board believes the critical NNSA assumption that these upgrades are adequate is flawed and, as a result, the current safety strategy is not defensible for the following reasons. Not all ignition sources inside high-risk gloveboxes are seismically secured to the glovebox shell; therefore, fires could still result from ignition sources toppling inside gloveboxes during a seismic event, even if the gloveboxes themselves do not topple. Additionally, ignition sources that could initiate post-seismic fires exist outside of gloveboxes targeted for seismic upgrades. DOE must take steps to develop a defensible seismic safety strategy for the Plutonium Facility.

Near-term actions and compensatory measures to reduce significantly the consequences of seismically induced events will likely involve operating the facility with restrictions on material-at-risk, removing inventory from susceptible locations or storing material in robust containers, and reducing the likelihood of a fire following a seismic event by identifying and implementing appropriate safety measures. Consistent with the Board's Recommendation 2004-2, *Active Confinement Systems*, one long-term strategy that could provide effective mitigation for seismic events involves upgrading the facility's confinement ventilation system to meet seismic performance category 3 criteria. This strategy would allow the confinement ventilation system to reduce reliably the consequences of a seismically induced event by many orders of magnitude to acceptably low values.

In a letter to the Board dated June 16, 2009, the NNSA Administrator rejected the implementation of some upgrades identified to address performance gaps uncovered during execution of the Implementation Plan for Recommendation 2004-2 for the Plutonium Facility's confinement ventilation system on the grounds that these upgrades were not required under the current DSA/SER strategy. LASO's present position is that upgrades to ensure post-seismic operability for active confinement ventilation may be desirable, but LASO does not expect to develop the information necessary to make a decision (e.g., cost, scope, and mitigation benefits) until mid-fiscal year 2011. The Board believes that NNSA's current safety strategy is flawed and does not obviate the need for a seismically qualified safety class active confinement ventilation system at its Plutonium Facility.

Given the magnitude of the potential consequences to the public, the Board believes DOE must develop expeditiously a defensible safety strategy for seismically induced events at the Plutonium Facility and a credible plan for implementing this strategy. ***DOE's response must include definite, measurable, and immediate means to substantially reduce the potential consequences at the site boundary.*** Implementation of a sound safety strategy must be pursued on an urgent basis.

Recommendation

In this context, and in recognition of the fact that LANL's Plutonium Facility has been designated as the center for plutonium operations in the complex, which includes the manufacture of pits for weapon assemblies, the Board recommends that DOE:

1. Implement near-term actions and compensatory measures to reduce significantly the consequences of seismically induced events, including clear identification of consequence reduction targets/goals, schedule, and implementation methods. In planning for and completing these actions and compensatory measures, DOE should be guided by the need for immediate actions and mindful of the provisions of 42 U.S.C.§2286d(f)(1) regarding implementation timelines.

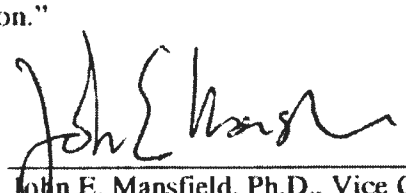
2. Develop and implement an acceptable safety strategy for seismically induced events that includes the following elements:

   a. A technically justifiable decision logic and criteria for evaluating and selecting safety-class structures, systems, and components that can effectively prevent or mitigate the consequences of seismic events to acceptably low values.

   b. The seismic analysis approach for structures, systems, and components required to implement the seismic safety strategy.

   c. A prioritized plan and schedule, including quarterly briefs to the Board for the next 12 months, for seismic analyses, necessary upgrades, and other actions to implement the seismic safety strategy.

The severity of the problems that are the subject of this Recommendation and the urgency to remediate them argue forcefully for the Secretary to avail himself of the authority under the Atomic Energy Act (U.S.C.§2286d(e)) to "implement any such recommendation (or part of any such recommendation) before, on, or after the date on which the Secretary transmits the implementation plan to the Board under this subsection."

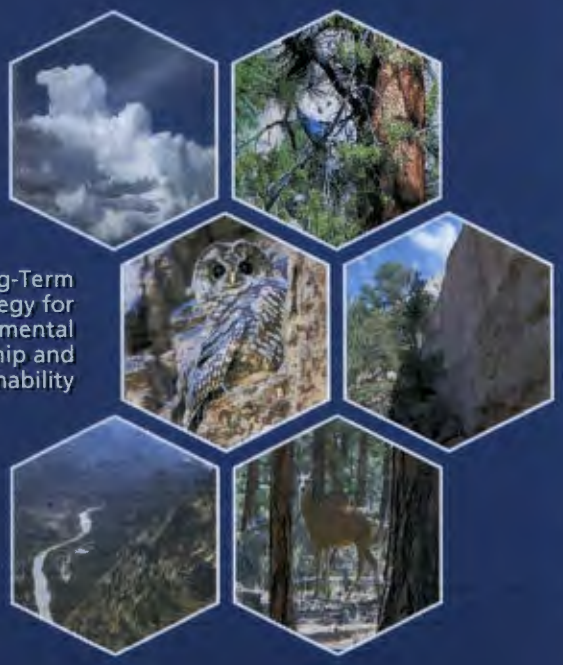


John E. Mansfield, Ph.D., Vice Chairman

Logic Order

- Purpose
- Vision/Mission
- Strategy
- Implementation
- Framework
- Grand Challenges
- Examples of implementation
- Public Involvement
- Intellus
- Contact info

Long-Term Strategy for Environmental Stewardship & Sustainability



Michael Brandt

January 2013

Purpose of a Long-Term Horizon

- **Demonstrates commitment**
  - Protecting human health
  - Protecting the environment
  - Using a long-term strategy
- **Implementing with a certified Environmental Management System**
  - Defines environmental policy
  - Spells out risk priorities
  - Implements strategies, goals, and performance expectations
  - Provides yard stick to measure progress
- **Supports mission achievement**

Collaborating On One Mission

Vision and Mission

Field Office Vision

"The intent of this effort is to take control of LANL's future and set the standard for environmental stewardship for all of New Mexico."

— Juan Griego

Acting Los Alamos Site Manager

Laboratory Director's Mission

"This Plan provides a framework for us to ask the right questions now, so that when new issues arise, we will be prepared. The Plan integrates various environmental protection activities into a comprehensive environmental stewardship *strategy*."

— Charlie McMillan

Laboratory Director

What exactly is LANL's long-term strategy for the environment?

LANL's Long-Term Strategy for Environmental Stewardship and Sustainability is to be the sound environmental stewards required for accomplishing our national security mission. The strategy is to protect human and environmental health by

1. Cleaning up or stabilizing historical releases to the environment
2. Controlling current programs to ensure an impact to the environment which is as low as reasonably achievable and
3. Creating a sustainable future through pollution prevention, waste elimination, energy and water conservation, and fostering resilient ecosystems.

The strategy looks from two linked perspectives

1. A broad-reaching vision to set long-term environmental goals.
2. A day-to-day examination of decisions to choose those actions that are most protective.

Implementation

We implement the strategy through

- Open communication and consultation with our stakeholders resulting in
- Overarching strategies to guide decisions over the long-term.
- We then deploy programs and software applications which support protective, proactive decision making
- To create a sustainable future beyond ordinary compliance requirements.

Public tour of sediment control structures in Pueblo Canyon

1000th shipment of TRU waste from Area G

Framework for Long-Term Environmental Stewardship

Input from Congress, Tribes, State, Public → DOE, NNSA, LASO Direction → Senior Management Leadership → Programmatic Strategic Planning → Proactive Actions

Long-term Development Plan

Strategy for Long-Term Environmental Stewardship

Site Sustainability Plan

Public Information

Web & Outreach

Environmental Management System

Proactive Actions

LANL Decision Support

Google earth

Intellus New Mexico
Connecting Community, Science and Environment

Integrated Siting Services

Env Sampling Board

Environmental Grand Challenges

Consult with tribal governments and collaborate with our stakeholders to ensure that LANL's impact on the environment is as low as reasonably achievable.

Remove or stabilize pollutants from the Manhattan Project and Cold War eras.

Protect water resource quality and reduce water use.

Eliminate industrial emissions, discharges, and releases to the environment.

Protect human and environmental health by managing and restoring lands.

Produce zero radioactive, hazardous, liquid, or solid wastes.

Use energy efficiently while creating sustainable energy sources.

Time Frames Dictate Stewardship Actions

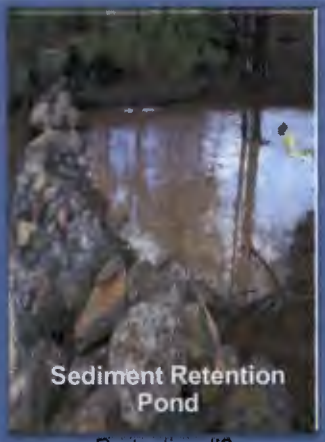
Time Frame	Region	Issues	Actions	Outcomes
Clean up the Past	Eco Regions	Water quality Erosion	Stormwater controls Removal & stabilization	Environmental & Human Health
Control the Present	Land use Planning	Wildfire & flooding Threatened & Endangered Species	Defense in Depth Cultural & biological resource management	Prevent pollution Eliminate outfalls Full compliance
Create Sustainable Future	Buffers zones	Wind erosion Climate change	Habitat buffer protection	Sustainable mission Ecosystem health

- **Clean up past contamination**: focus on eliminating the source of contamination or on blocking or removing the pathways to receptors
- **Current operations**: practice pollution prevention, waste minimization, outfall reduction and compliance with regulations
- **New projects**: make sound land-use considering over 50 different environmental constraints.
- **For a sustainable future**: implement projects to have the lowest possible environmental impacts

Protections = Defenses in Depth for Protecting Human and Environmental Health

Protection #1

Remove the Source



Protection #2

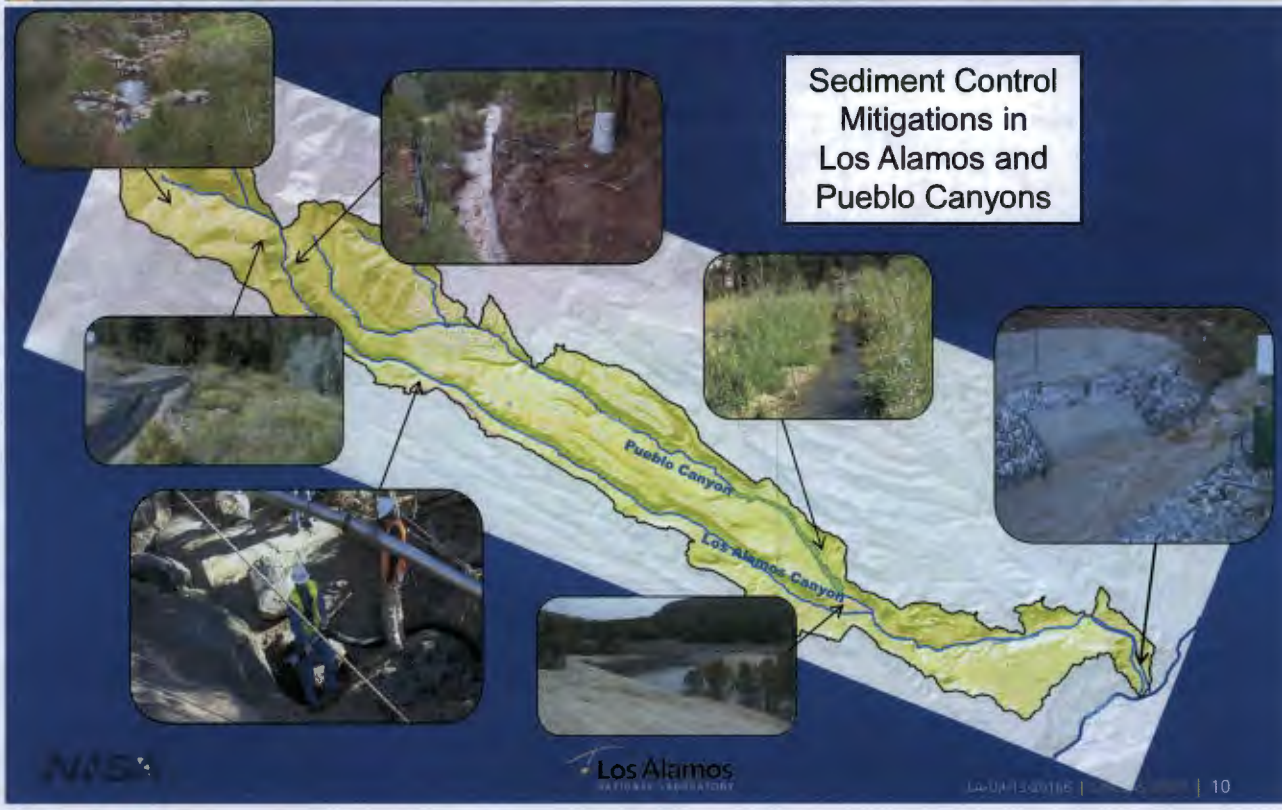
Stabilize or remove sediments

Protection #3

Measure for known and unexpected contaminants

Anticipate, recognize, evaluate, control and mitigate emerging environmental challenges

Example of Defenses in Depth



Trust but Verify

Stormwater

Foodstuffs & Biota

Environmental Sampling

- Relevant and appropriate data
- Answer questions about the protection of human and environmental health
- Satisfy regulatory requirements
- Technically justified and of sufficient quality
- Transparent and readily available to the regulators and the public
- Ensures a holistic, adaptable, and cost-effective approach

Clean Air

Soils

Groundwater

How many times does LANL reuse water?

1 Use: Municipal water in kitchens, labs & bathrooms

- Treated as sanitary waste water
- Pumped to SERF

2, 3, 4, 5 Uses:

- Sanitary Effluent Reclamation Facility (SERF)
- Super purifies water
- Circulates up to 4 times to cool super computers

6, 7 Uses: Released to maintain the Sandia Canyon to promote healthy wetlands.

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Future Stewardship Integrated Today

Legacy Concerns
Clean up the Past

1. Transuranic radioactive waste at TA-54
2. Chromium in groundwater
3. Material disposal areas
4. Stabilization
5. Remediation

Current Operations
Control the Present

1. Permits and compliance
2. Standards (air/water/soils)
3. Conservative action levels
4. Pollution prevention

Future Stewardship
Sustain the Environment

1. Risk-based wildfire management
2. Reduce green house gas emissions
3. Preservation & conservation
4. Healthy ecosystem services
5. Goals to generate zero waste
6. Climate change adaptation
7. Water conservation
8. Energy efficiency

Connectivity and Relationships

LANL SITE SUSTAINABILITY

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Public Involvement

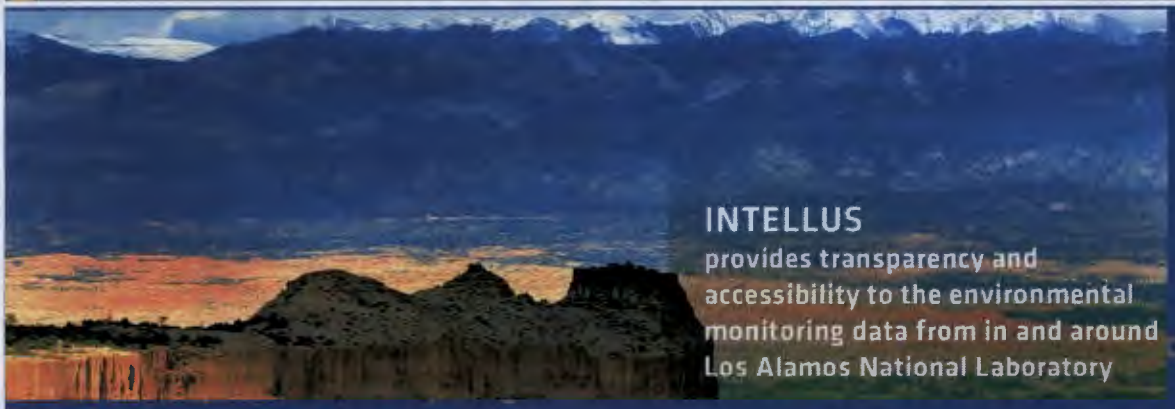
- Address pressing public interests
  - Clean water
  - Air Quality
  - Recreational use
- Focus on facts
- Diverse approaches designed for engagement and participation
- Government to government consultation with tribes
- NEPA
- Educational outreach
- Tours

Water studies on the Rio Grande

Public tour of TRU waste storage at Area G

Public tour of open burning waste disposal

Intellus Contains 11 Million Environmental Sampling Records Open to the Public



Intellus is a publicly accessible database that provides access to over 11 million records collected by the Laboratory as part of environmental surveillance and compliance sampling activities.

www.intellusNMdata.com

On the web

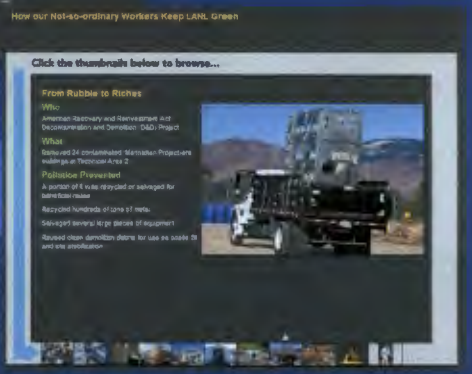
Google Earth Tours

Answering the most pressing questions

Models and Educational Information

Interactive information

Projects and Accomplishments



www.lanl.gov/projects/envplan

We request your feedback

This strategy is dynamic. We expect to improve it as we go and we request your input…

- Visit the Long-Term Strategy website: www.lanl.gov/projects/envplan
- Visit LANL's environmental website: www.lanl.gov/environment and sign up for e-mail notification
- Visit the electronic Public Reading Room: http://eprr.lanl.gov
- Visit the print Public Reading Room:
  97 Cities of Gold Road, Pojoaque, NM
- Call the Environmental Outreach Office: 505-667-0216
- E-mail the Environmental Outreach Office: envoutreach@lanl.gov
- Write us at: Environmental Outreach
  Los Alamos National Laboratory
  P.O. Box 1663, MS M996,
  Los Alamos, NM 87545
- Visit www.intellusNMdata.com for all sampling data from LANL