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Analyses of DOE Environmental Management
Economic and Environmental Issues in New Mexico

by **Nuclear Watch of New Mexico**

santa fe new mexico
december 2006



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The mission of Nuclear Watch of New Mexico is to provide timely and accurate information to the public on nuclear issues in New Mexico and the Southwest. Through the resulting empowerment of effective citizen action, Nuclear Watch of New Mexico seeks to promote both greater safety and environmental protection at regional nuclear facilities and federal policy changes that genuinely encourage international efforts to curb the proliferation of nuclear weapons.

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www.mtafund.org

As part of a 1998 court settlement between U.S. Department of Energy (DOE) and 39 plaintiffs (nonprofit peace and environmental groups around the country), DOE established a \$6.25 million Citizens' Monitoring and Technical Assessment Fund (MTA Fund) to provide money to non-profit, non-governmental organizations and Federally recognized tribal governments working on issues related to the nuclear weapons complex. The Fund was established to help those groups procure technical and scientific assistance to perform technical and scientific reviews and analyses of environmental management activities at DOE sites. These grants may also support dissemination of the technical and scientific reviews and analyses undertaken with monies from the MTA Fund, but cannot be used for litigation, lobbying, general administrative support, or fundraising.

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*Analyses of DOE Environmental
Management*

Economic and Environmental Issues in New Mexico

December 2006

Nuclear Watch of New Mexico

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Economic and Environmental Issues in New Mexico

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Economic and Environmental Issues in New Mexico

Overview

In April 2003, **Nuclear Watch of New Mexico** (NukeWatch) was funded by the **Citizens' Monitoring and Technical Assessment (MTA) Fund** to conduct "*Analyses of Department of Energy Environmental Management: Economic and Environmental Issues in New Mexico.*"

New Mexico is home to two of the nation's three nuclear weapons labs, the Los Alamos and Sandia National Laboratories, with annual budgets of more than \$2 billion each. New Mexico also hosts the Waste Isolation Pilot Plant, the world's only deep geological disposal site for radioactive transuranic wastes, which are primarily plutonium contaminated wastes resulting from nuclear weapons research and production. The Los Alamos National Laboratory (LANL) has complex environmental problems caused by past contamination while its small cleanup budget is proposed to be cut. Nevertheless, LANL is generating yet more wastes as the result of its expanding nuclear weapons research, development and production programs, much of it slated for disposal at WIPP. The twin foci of NukeWatch's project were those two Department of Energy (DOE) facilities.

Environmental Issues at the Los Alamos National Laboratory

In March 2005, the New Mexico Environment Department (NMED) issued as per its authority under the Resource Conservation and Recovery Act (RCRA) a final "Corrective Action Order" against LANL. In 1976, RCRA was passed as an amendment to the Solid Waste Disposal Act. It was the first substantial congressional effort to create a "cradle-to-grave" regulatory structure for the management and disposal of hazardous wastes, with the Environmental Protection Agency as the regulating authority. In 1985, NMED received EPA authorization to implement a hazardous waste program, which effectively meant that New Mexico was given RCRA authority over hazardous wastes. In 1990, New Mexico also received authorization from EPA to regulate the hazardous portion of wastes mixed with radioactive contaminants. The Corrective Action Order mandates the investigation and compilation by the Lab of comprehensive environmental information categorized by different Technical Areas, watersheds and groundwater. The Order also requires LANL to propose methods of cleanup for each of these areas, approved or not by NMED. Our project's efforts on Lab environmental issues turned to analyzing and commenting on the Corrective Action Order deliverables.

One goal was to pressure NMED to persevere in its schedule without delay (its track record thus far is not good) and to help assure that the environmental data supplied by LANL were of good

quality. Ironically, NMED, the permitter and regulator of the LANL RCRA permit, never did issue a draft during the time period of our project. The existing RCRA permit for LANL expired in 1999, and has been “administratively extended” by NMED ever since. Under its RCRA authority, NMED has essentially put all its cleanup eggs in one basket with its Corrective Action Order against LANL. We argue that both are needed and will continue to press NMED to release a draft RCRA permit.

The Corrective Action Order is now formally known as the Consent Order, since all parties legally agreed to it after nearly two years of tortuous negotiations. The Order is currently a plan to make a plan and does not mandate actual cleanup techniques and levels. However, it is NMED’s stipulated intent that as enough data is collected, the Consent Order will be amended to include State-mandated cleanup techniques and levels. Thus, much of our project efforts centered on analyzing and commenting upon the Consent Order deliverables required of LANL. We have consistently recommended that NMED should employ the most restrictive future land-use scenario (residential or agricultural) for all radioactive and hazardous substances, as opposed to the Lab’s desired “industrial use” that would dramatically lower the stringency of cleanup. As already indicated, our overall objective was to foster the highest possible level of State-mandated cleanup at LANL through our submission of technical comments on both the milestones and deliverables under the Consent Order.

Well before the Consent Order went into effect, LANL proposed its own version of cleanup. However, its proposed “Risk-Based End States Vision” did not envision genuine cleanup. Instead, it was the latest permutation in a long pattern of DOE and the University of California (LANL’s manager) avoiding comprehensive cleanup at the Lab under so-called “accelerated cleanup.” This wasted taxpayers’ money on an environmental restoration program that was overwhelmingly ineffective. Before the Consent Order, DOE and UC at the highest levels simply lacked the will to truly cleanup; however, they succeeded year after year in engineering budget increases for nuclear weapons programs. They even went so far as to state that “cleanup” was to be given added funds only on the condition that New Mexico accepted LANL’s “vision” of not cleaning up. Thus, a significant project effort was to provide technical comment (enclosed) on LANL’s “Risk-Based End States Vision.” Fortunately, NMED’s Consent Order effectively terminated that vision.

One area that NMED does not have authority over is low-level radioactive wastes that are not mixed. These wastes, including legacy wastes, are disposed of at LANL’s Material Disposal Area “G.” Area G is technically low-level only in that the Lab stopped dumping higher-level radioactive and mixed hazardous wastes in 1985 following the enactment of RCRA in 1980 (it took LANL five years to begin to comply with the law).

In January 1999, DOE released a final Site-Wide Environmental Impact Statement (SWEIS) for Continued Operations of LANL, which is required every ten years under the National Environmental Policy Act. Two interrelated specific operations were analyzed in the SWEIS: expanded plutonium pit production and expanded low-level radioactive waste disposal at Area G. Concerning the latter, the preferred alternative was to develop 30 acres within Area G called Zone 4, immediately west of the active disposal area. NukeWatch believes Area G, as it exists now, 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 and leachate collectors to help protect the environment and the regional aquifer. The proposed expansion should not be allowed to continue (please see enclosed fact sheet).

Economic Impacts of the Los Alamos National Laboratory

In our economic analysis, we found a grim outlook concerning New Mexico broadly benefiting from DOE's large presence, which our congressional leadership continues to promote. Small, isolated areas in the State clearly benefit, but that benefit is largely insular (Los Alamos County being the prime example). Intra-State economic and social disparity has continued in recent years, and if current trends continue, these disparities will likely grow wider yet. According to recent demographic statistics, New Mexico has the highest national rate of residents living in poverty, the second highest percentage of residents lacking health insurance and is ranked 46th in the nation in per capita income. New Mexico is at the bottom when it comes to teacher salaries and the socioeconomic conditions for raising children well. In stark contrast, Los Alamos County is the richest county in the U.S., and its children enjoy by far the least poverty in New Mexico and one of the lowest poverty rates in the entire nation.

Over the past four decades important economic measurements in New Mexico have fallen further behind relative to all other states. According to U.S. Census Bureau data, New Mexico was 37th in per capita income in 1959, 41st in 1969, 42nd in 1979, 41st in 1989, 44th in 2000 and 46th in 2004. The bottom line of our economic study is that LANL has overstated its beneficial economic impact on New Mexico, thereby misleading the public and lawmakers, while citizen per capita income continues to generally decline.

Waste Isolation Pilot Plant Issues

The purpose of our Waste Isolation Pilot Plant (WIPP) project efforts to was to look closely at the Department of Energy's (DOE's) anticipated modifications to the remote-handled transuranic (RH-TRU) waste program as it pertains to WIPP. [RH-TRU wastes are those too hot for humans to handle.] However, because of the consistently changing nature of the DOE's environmental management program and because of the interlocking nature of those changes, our WIPP project took on a broader scope.

In April 2005, DOE submitted to the New Mexico Environment Department a new "monster" modification for WIPP, so-called because it bundled three previously requested but rejected modifications into one massive one. This new mega-modification proposed to eliminate characterization of waste. Instead of physically examining the waste, DOE intends to use paperwork, known as "acceptable knowledge," to determine whether the waste may be disposed of at WIPP. The monster modification also proposed to bring RH TRU waste to WIPP. This waste is potentially very dangerous and DOE still hasn't been able to demonstrate a firm grasp on its contents. DOE also wanted to more than double the amount of waste that can be stored above ground at the WIPP site.

In the end, DOE's plan to ship waste to WIPP, and only upon arrival finally "confirm" that it meets regulatory requirements, was dropped. The DOE request and draft permit provisions to substantially reduce waste examination was changed so that either x-raying or opening each container is still required. Remote-handled waste will be allowed, though it must be fully examined and repackaged before shipment. The substantial increases in waste storage and disposal capacities were decreased, including about a 40 percent reduction in RH waste.

NukeWatch's first and foremost interest in WIPP is to make certain that the facility maintains a high level of safety and protection of human health and the environment, which we have made our mission to emphasize at all times through the public permit process. We believe that we have played a role in helping to ensure that the State WIPP RCRA permit remains strong and that the DOE's requested modifications are not just perfunctorily approved by the NMED.

Defending the National Environmental Policy Act

NukeWatch submitted comments on a Congressional Task Force's recommendations to "improve" the National Environmental Policy Act (NEPA). NukeWatch personnel have had fairly extensive experience with NEPA, albeit solely limited to DOE issues. We have participated in some fifteen different NEPA processes, including environmental assessments, environmental impact statements, site-wide environmental impact statements, and programmatic environmental impact statements. The overall intent of our effort was to help protect and preserve the National Environmental Policy Act, which has been commonly referred to as the "Magna Carta" of U.S. federal environmental laws.

The following sections of this report contain work product samples of quarterly newsletters articles, facts sheets and comments, all of which clearly reflect our work on project issues. We are grateful to the Citizens' Monitoring and Technical Assessment Fund for supporting and enabling that work, and regret that the Fund is now coming to an end. Nevertheless, Nuclear Watch New Mexico will continue its work for the foreseeable future on these same issues, that is cleanup at the Los Alamos National Laboratory, environmental protection and safety at the Waste Isolation Pilot Plant, and the economic disparities inherent to the DOE presence in New Mexico.

Jay Coghlan
Scott Kovac
John Witham

December 2006

Analyses of DOE Environmental Management

Economic and Environmental Issues in New Mexico

Section 1



Nuclear Watch of New Mexico
December 2006

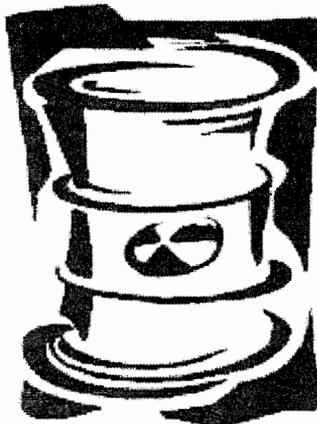
A Snapshot of Cleanup at LANL

They [DOE and LANL] want to play hardball: I can play hardball too... New Mexico will not - and I repeat, will not - give up on cleanup of the environment for dollars.
--Gov. Bill Richardson, accusing DOE of "extortion."

- DOE never completed required public review of its nationwide cleanup program, which will cost taxpayers up to an estimated \$300 billion and 70 years to complete. DOE lumps together cleanup and the "waste management" of currently generated nuclear weapons wastes while commonly portraying the entire "environmental management" budget as dedicated to cleanup (the latter is only around 33%). Los Alamos National Laboratory (LANL) decided that public review of its cleanup program was off-limits in its legally required 1999 Site-Wide Environmental Impact Statement for Continued Operations.

- A 1997 audit by the DOE Inspector General found that out of \$413 million spent by LANL for cleanup only 21% had gone to actual cleanup (the rest went to studies, administration and overhead). An estimated \$700 million has been spent to date, with questionable effectiveness. New Mexico's Environment Department (NMED) found that plutonium contamination in stormwater runoff is now 100 times greater than before the Cerro Grande Fire.
- In response to the lack of progress and declining cleanup funding the NMED issued a "Corrective Action Order" against LANL. This Order does not mandate cleanup, but is instead a very comprehensive and enforceable information request that should eventually lead to State-mandated cleanup.

- The DOE and University of California (LANL's manager) responded to the Order by filing six lawsuits against New Mexico in federal and state courts. If successful, these lawsuits would roll back two decades of legal evolution of states' authority over DOE sites and set terrible precedent across the country.



- LANL formulated an internally devised "Performance Management Plan" that explicitly plans to "cap and cover," not cleanup, its major hazardous and radioactive waste dumps. Further, it plans to turn over cleanup to the nuclear weaponsers by 2015, who created the mess to begin with.

- Funding for lab cleanup has fallen from a high of more than \$100 million in 1994 to under \$30 million in 2004. The PMP proposes to add approximately \$45 million in 2005 to that \$30 million "baseline," if only New Mexico would agree to the lab's cleanup plan (which is effectively non-cleanup). This is the "extortion" to which Governor Richardson refers.

- The lab also drafted an internally devised "Risk-Based End States Vision" (RBES). In our view, its essential purpose is to establish the framework for calculating potential risk to humans from residual contaminants based on future *industrial* use versus an *agricultural* or *residential* use. Industrial use assumes human occupancy for only eight hours a day, thereby dramatically lowering potential risks and the need for cleanup. A consultant for NukeWatch has calculated, for example, that cleanup to an industrial standard would leave 900 times as much plutonium-239 in the ground as would an agricultural standard. No doubt, in the lab's view, that would overwhelmingly eliminate the need for cleanup,

except at the major waste dumps. But the lab has already made it clear that it won't clean them up anyway!

So there you have it! For much, much more see our comments on the LANL Risk-Based End States Vision and 'LANL Cleanup' and "Risk-Based End States" at www.nukewatch.org.

High-Level Waste: a ruse by any other name?

The problem of spent reactor rods and other high-level nuclear wastes, dangerous for more than 100,000 years, has been a grave concern for decades. Nuclear power plants across the country have high-level waste (HLW) piling up. The Yucca Mountain Site in Nevada, despite heated debate and questionable engineering, has been designated as the final dump for high-level wastes. But with Yucca Mountain long delayed, the Department of Energy (DOE) is looking for another repository for a lot of its high-level wastes left over from decades of bomb production.

The Waste Isolation Pilot Plant (WIPP) in southern New Mexico is the only site in the country that is accepting transuranic nuclear waste. Because WIPP is open for business, DOE now wants to change its original mission so that it could accept some of its high-level radioactive wastes. But never fear; DOE wouldn't simply send high-level waste to WIPP. No, first they would change the name of the waste -- and then send it to WIPP.

DOE has been attempting to rename wastes that have been classified as high-level for some time now. In many instances the attempt to change the waste definition would allow DOE to leave the waste on-site indefinitely-- saving a good chunk of change for DOE, but denying desperately needed cleanup to the sites. This time the New Mexico Environment Department (NMED) is attempting to nip DOE's semantic antics in the bud.

NMED recently submitted its own permit modification request to bar high-level wastes at WIPP. DOE strenuously opposes this modification, and has hired Pete Domenici, Jr. (yes, the son of our senior senator Pete Domenici) to fight it when it goes to hearing.

Already there has been questionable maneuvering by DOE with respect to this modification. Domenici (Junior, not Senator) requested at the last hour to delay the original hearing date. Without any public discussion, the hearing officer agreed to this unjustified request. This wasn't irritating just because of the time delay, but also because many non-profits opposed to HLW at WIPP had already put a great deal of time, effort and resources into the hearing date that had been previously agreed upon.

To make things a little more interesting, folks at Hanford (the former plutonium and tritium production site in Washington State --now one of the most contaminated in the world) believe that with a permit modification request in hand they can send some of their high-level tank wastes to WIPP. Additionally, events in the Senate came to a head when the Cantwell-Hollings amendment to the Defense Authorization Bill went to the floor. That amendment would have forced DOE to completely clean up tanks that store liquid HLW, and release \$350 million to the sites for cleanup. DOE is currently using this fund as "extortion" money. Unfortunately, the amendment, which needed only a majority to pass, lost in a 48 to 48 tie.

Do not allow DOE to bring high-level waste to WIPP. Be sure to make your views known when the NMED permit modification request comes to hearing in Santa Fe, New Mexico. We'll let you know the new hearing date on our website: www.nukewatch.org.

--Geoff Petrie

-June 2004 Nuclear Watch Newsletter-

**Low-Level
Rad Wastes:
into Landfills
and Frying Pans?**

The EPA recently asked for public comments on ways to 'simplify' the disposal of low-level nuclear waste. In effect, EPA is attempting to 'redefine' radioactive waste as safe for landfills not licensed for it. The essence of this proposal, formerly known as "Below Regulatory Concern," has been kicking around for years. EPA was now asking for citizen comments on how to allow low-level mixed radioactive waste to be dumped into these landfills, not *if* this should be allowed.

Low-level mixed waste (LLMW) is any mixture of low-level radioactive and hazardous (i.e., chemical) wastes. EPA describes dumping LLMW into landfills that are currently designed only for hazardous waste as a 'viable' option. These landfills are designed to not leak for only 30 years after closure, while LLMW can be radioactive for countless thousands of years. Using these landfills for nuclear waste would disperse radioactivity across the nation. Moreover, there is no requirement to inform people living near these landfills about the new radioactive hazards being dumped next to them.

Again, EPA is asking the old question, "How much harm can we get away with?" because they are basing the proposal on calculated risk. The proposal asks for comments on the minimum dose an individual should receive, not if the public should ever receive additional doses at all.

This proposal is another attempt to relieve the regulatory and financial burdens of industries that generate radioactive waste. As nuclear waste disposal costs continue to soar, DOE has, for many years, also sought permission to sell its radioactive scrap metals. They then could be recycled into everyday consumer goods (for example, toasters, jewelry, and children's toys). Again, citizens would be placed in close contact with radioactive materials without informed consent.

The New Mexico Environment Department has expressed strong reservations over EPA's proposal. It's crucial that the public continue to take a stand against any deregulation of radioactive waste, and keep the burden of safe waste disposal on the shoulders of those who profit by generating it.

-Scott Kovac

-October 2004 Nuclear Watch Newsletter-



In early September the New Mexico Environment Department (NMED), DOE and the University of California (as LANL's manager) entered into a NMED-initiated "Consent Order" after more than a year and a half of protracted negotiations. In 2002, DOE and UC filed four different lawsuits against a draft Order. The stated purposes of this final Order are to determine the extent of contamination at LANL, the necessary remedies, and to implement "corrective measures." This Order is not perfect. In many ways it can be characterized as a plan for yet more plans. Nevertheless, in our view NMED is to be congratulated for hanging tough and creating **legally enforceable mechanisms for future State-mandated cleanup**. The only other alternative is the Lab's own dismal plans for not cleaning up.

NMED succeeded in a number of important points. First, it was able to stipulate **financial penalties** in the event that LANL fails to meet the Order's extensive schedule of milestones. The Environment Department managed to wring from DOE "voluntary" reporting of

the radioactive portion of mixed (i.e., both hazardous and radioactive) contamination at LANL, while reserving its **right to enforce that in the future**. Finally, through the Order, NMED was able to break some new legal ground by assuming jurisdiction over contamination caused by the specific types of **high explosives** used in nuclear weapons.

There is one big hitch. New Mexico is one of a handful of states that has not received EPA-delegated jurisdiction over **federal surface water quality regulations**. The draft Order had included surface water monitoring requirements, a possibly tenuous legal position given that lack of jurisdiction. Because in the end DOE did want to settle with NMED it proposed a "Federal Facilities Compliance Agreement" (FFCA) between DOE and EPA. This agreement would allow for input from NMED on surface water issues, but nevertheless the **enforcing power would remain the EPA**. The final Order does not include surface water monitoring requirements, but the hope is that EPA would be more far more motivated to enforce because of the agreement. NMED Secretary Ron Curry has said he will not finalize the Order until the FFCA is finalized, a draft of which is expected to be released this month.

In closing, **Ron Curry and NMED staff deserve a big thumbs up for winning this Order**. Having said that, the watchdogs intend to see that it really translates into State-mandated cleanup in the future. -Jay Coghlan

-Spring 2005 Nuclear Watch Newsletter-

News from the "Duh!" Department:

**LANL Admits that Our Aquifer Recharges Under the Lab!
Who Knew? The Lab May Be Dangerously Polluting New Mexico Groundwater!**

In public groundwater meetings over the course of the last year, Los Alamos National Laboratory (LANL) finally admitted that our regional aquifer captures some of its water from under the Lab. As late as 1997, LANL officially stated that our regional aquifer under Lab property was protected from contaminants by "impermeable geologic formations." But ever so belatedly, the Lab has concluded that the geological formations under LANL are not so impervious. Non-LANL hydrologists as far back as 1963 had reached this same conclusion. LANL hydrologists now rate the Lab's plateau as a **moderately high recharge zone**.

Since 1943, approximately 18 million cubic feet of solid radioactive and chemical wastes were disposed onsite at the Lab. In its early years, the Lab discharged uncounted millions of gallons of untreated radioactive and chemical liquid wastes into surrounding canyons. Precipitation and liquid effluent were thought to percolate slowly, but fractures could provide quicker pathways for contaminated water to our aquifer. Los Alamos, located near an extinct volcano and beside a rift valley, has **numerous seismic faults** running underneath it. These faults are possibly significant recharge pathways to our regional aquifer.

Canyons around the Lab are characterized by concentrated, high recharge rates and potentially rapid transport to our deep aquifer. The canyon bottoms provide direct access to intermediate or "perched" aquifers. Discharge from these perched zones results in recharge to our underlying regional aquifer. Our regional aquifer provides drinking water for much of north central New Mexico.

Santa Fe obtains most of its **drinking water** from our regional aquifer via the Buckman wells located just east across the Rio Grande from LANL. According to a 2002 report by LANL hydrologists, the Buckman wells field draws roughly **one-third water of its water from across the Rio Grande** and at least partially from under LANL property.

Northern NM is (fortunately) in the middle of one of the wettest winters in many years. However, with every drop of rain or snow that falls, we should be reminded that, in the long run, there is a **potential threat** to our very own faucets from waste at LANL.

--Scott Kovac

-Spring 2005 Nuclear Watch Newsletter-

"CAP & COVER" - NOT GOOD ENOUGH!

Not pretty: Los Alamos National Laboratory (LANL) will not clean up a dozen major radioactive and hazardous waste dumps, but instead will merely "cap and cover" them. 600 "potential release sites" might need cleanup, if only the investigations were completed. Offsite plutonium stormwater migration is a hundred times greater after the big Los Alamos fire five years ago. Cleanup funds have been slashed in half since 1995, while nuclear weapons programs doubled. Cleanup is to be transferred to the weaponers themselves.

Fortunately, the State of New Mexico recently forced DOE and the Lab to sign a comprehensive cleanup compliance order. Governor Bill Richardson, New Mexico Environment Department (NMED) Secretary Ron Curry and his staff deserve enormous credit for sticking to their guns, despite four lawsuits filed by DOE and the University of California (LANL's manager) against New Mexico--followed by two tortuous years of negotiations.

This is very good news; the bad news is the order's two perhaps fatal flaws. First, it is not yet truly a cleanup order; it is instead a glorified (but enforceable) information request that *should* lead to real cleanup once the needed information is obtained (data which the Lab has obfuscated for many years). Nevertheless, NMED has laid an excellent foundation for future State-mandated cleanup of LANL.

The second problem: to what standard will the Lab will be cleaned up? The danger is that NMED might preemptively surrender to site-wide "industrial use" instead of a residential or agricultural standard. "Industrial use" may

seem logical since the Lab is federal property with no residences or agriculture within its boundaries. However, that wasn't true until the U.S. government forcibly seized the land some sixty years ago, and certainly will not be true indefinitely into the future.

The actual industrial footprint of Lab operations is surprisingly small. "Industrial use" allows hundreds of times the amount of contaminants to be left forever--an excuse for undermining the need for cleanup altogether. The Lab has already self-declared 60% of its property to be within a "Manufacturing and Industrial" zone, and is planning to expand it dramatically.

NMED declares that each potential cleanup site will be subject to public review, including future land-use designations. This cries for sustained citizen involvement (NukeWatch will be there!). But rather than fighting case-by-case, it would be far better if NMED determined that Lab property not actively used for nuclear weapons "industry and manufacturing" were subject to residential or agricultural cleanup standards. For that matter, why shouldn't all nuclear weapons "industry and manufacturing" also be subject to cleanup standards that truly protect future generations?

To quote Shakespeare, there comes a time in the affairs of men which, taken at the tide, leads on to victory. In the face of escalating federal deficits and the potential rollback of environmental laws, the next decade is the very time to get LANL cleaned up, if it is ever to be done. That is what all New Mexicans should demand!

--Jay Coghlan

-Spring 2006 Nuclear Watch Newsletter-

Water Issues at LANL

Evidence of Lab Groundwater Contamination Continues to Pour Out

In March 2006, Los Alamos National Laboratory (LANL) reported to the New Mexico Environment Department (NMED) that chromium was detected in the regional aquifer at 405 parts per billion (ppb). The New Mexico Drinking Water standard is 50 ppb. Much or all of this is the toxic form chromium VI, made "famous" by the Erin Brockovich movie. LANL widely used chromium compounds to reduce corrosion in cooling towers, and millions of gallons of chromium-contaminated water were discharged into the Lab's canyons from the 1950s through the early 1970s. An estimated 500,000 pounds of chromium were dumped into the canyons.

LANL has been more than stubborn in acknowledging contamination of our aquifer underlying both Los Alamos and Santa Fe. Beginning in the mid-1980s, the Lab repeatedly asked NMED for waivers from required groundwater monitoring. Lab hydrologists formally claimed that aquifer contamination was impossible because of "impermeable geologic formations." Today, the Lab has been forced to reach the obvious conclusion that the geologic formations under LANL are not impervious. The canyon bottoms provide pathways for water to reach the intermediate and regional aquifers.

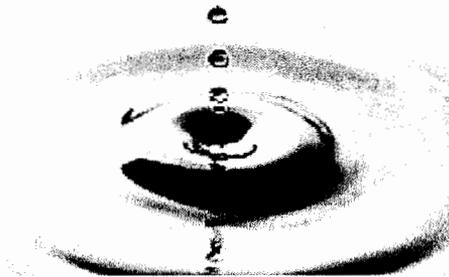
The Lab is located between an extinct super-volcano and the Rio Grande rift valley, and naturally has many seismic faults. These faults are believed to be significant recharge pathways to the aquifer. Yet, in a recent hearing with the National Academies of Science, Lab hydrologists downplayed the effects faults may have on contaminated surface water reaching the aquifer.

As late as the end of the 1990's, the Lab was claiming that it would take around 10,000 years for its operations to contaminate the aquifer. This was soon debunked when tritium, perchlorate and high explosives were found in the aquifer. The

newly discovered chromium contamination provides more tangible proof that transport time to the aquifer for some contaminants is a mere 40 to 50 years. In a December 2005 report Lab computer models now estimate these travel times as low as 5 years, depending on location. The report also states, "Future contamination at additional locations is expected over a period of decades to centuries as more of the contamination inventory reaches the water table."

The Lab's official slogan is "The World's Greatest Science Protecting America." We suggest that it ought to start right here at home.

--Scott Kovac



-Summer 2005 Nuclear Watch Newsletter-

LANL EXPANDS RADWASTE DUMP

Material Disposal Area "G", better known as just Area G, is LANL's "low-level" radioactive waste dump. This 65-acre area contains both surface waste storage areas and numerous subsurface waste landfills. Above ground, in large tent-like structures, transuranic waste resulting from nuclear weapons research and production awaits shipment to WIPP. Area G, equal in size to 49 football fields, also includes inactive, just-below-ground, unlined disposal units with depths ranging from 10 to 65 feet below the surface. There are also two pits currently accepting freshly generated "low-level" waste. Although the total excavated volume of all these just-below-ground units is over 1 million

cubic yards and the extent of environmental contamination is presently unknown, the dump at Area G is slated to increase in size, because of the Lab's continuing nuclear weapons programs

Please see our new Area G fact sheet, with background history and our recommendations, at www.nukewatch.org. Do you agree that in today's world, nuclear weapons should have a lower priority than protecting land and water? --SK





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 transuranic¹ (TRU) waste await shipment to the Waste Isolation Pilot Project² (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.³ 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."⁴

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.⁵ 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.⁶

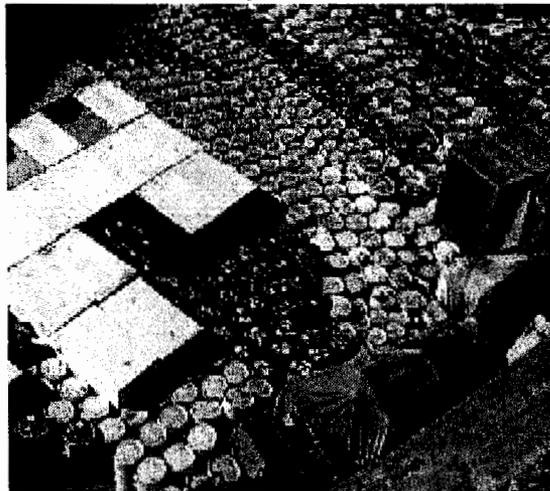
The extent of environmental contamination from Area G is presently unknown because LANL has never made a serious effort to do so. This will almost certainly change because the New Mexico Environment Department (NMED), last March, issued a Consent Order that prescribes an extensive suite of monitoring 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."⁷

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,⁸ with the Environmental Protection Agency (EPA) as the regulating authority. In 1985, NMED⁹ 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.

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.¹⁰ 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,¹¹ which included a **required closure plan for Area G.**¹² **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 2070,¹³ 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.¹⁴ 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, impeached 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.)

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 as events unfold beginning in spring 2006.

Scott Kovac and Jay Coghlan

October 10, 2005

(Notes)

¹ 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.

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

³ "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."

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

⁵ 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 meters³ 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.

⁶ From the 1992 WIPP Land Withdrawal Act.

⁷ Installation Work Plan, LA-UR-03-6491, September 2003, Executive Summary.

⁸ 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.

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

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

¹¹ 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.

¹² 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.

¹³ "General Information on Area G", http://web.em.doe.gov/lfrg/lanl_facts.html

¹⁴ 1999 LANL SWEIS, Vol. II, pp. I-6 & I-7.

Area G Expansion? Chorus of Opposition Grows

In May 2005 the Northern New Mexico Citizens' Advisory Board (NNMCAB, or simply "CAB") convened a public forum on the unlined "low-level" radioactive waste dump, Area G, at the Los Alamos National Laboratory (LANL). The CAB considered the public's majority views

and has now spoken out against the imminent Area G expansion (please see enclosed fact sheet for more details). NukeWatch applauds this opposition and looks forward to the CAB pressuring LANL to better protect the public and environment in the future.



The CAB is a community advisory group chartered by the Department of Energy (DOE) to provide citizen input on cleanup, waste management, monitoring, surveillance, and long-term stewardship issues at LANL. The first CAB was created in 1995. DOE pays the CAB's support costs, but the Board members serve voluntarily.

Since its inception, the CAB has undergone a few incarnations. In the late 90's, DOE reconstituted the CAB by replacing half of the CAB with Lab employees after some members questioned the safety of locating plutonium pit production at Los Alamos. Over the past several years, the CAB has regained its independence from DOE with new Board members. This CAB is generally against having LANL employees serve on the Board because of inherent conflicts of interest, and currently there are none.

Over the last few years, the CAB has made many very strong recommendations to DOE. Sadly, DOE has not responded to a full 30 of them. We encourage DOE to weigh carefully the CAB's Area G recommendations:

1. **No expansion.** LANL planned for 30 additional acres of dumping ground over the next 30-60 years because of increasing radioactive wastes from expanding nuclear weapons programs. Before a "closure" plan for the existing 65 acres is submitted to the New Mexico Environment Department, a comprehensive long-term performance assessment must be completed by an independent board of nationally recognized experts.

2. **Boldly, the CAB recommended that LANL permanently and irrevocably cease and desist from disposing of radiologically contaminated and hazardous wastes by underground burial.** The CAB further recommended that no more waste pits, trenches or shafts be dug or constructed and that no more radioactive or hazardous wastes be buried.

3. **The CAB recommended that DOE and LANL use the best available science to shift costs away from burial of radioactive and hazardous wastes to creating lasting solutions for reducing and eliminating waste production.**

The CAB's stated "intent" in these recommendations is to encourage DOE to stop burying radioactive wastes and instead invest in advanced waste management technologies that would support a broader goal of "zero discharge" from LANL. Further, the potential spin-off technologies would offer opportunities for regional economic development and genuine "world-class science" in solving down-to-earth waste disposal and management problems for the entire nation. We hope this is not failing on deaf ears because LANL zeroed out funding for research and development of cleanup technologies for fiscal years 2005 and 2006. NukeWatch urges the CAB to push the Lab into restoring that funding and becoming a leader in developing cleanup and waste management technologies. -- Scott Kovac

You can read the CAB's Area G Recommendation "2005-10" at www.nnmcab.org

A Rap Sheet on UC Management at LANL Or, kid, have you completely rehabilitated yourself?

On July 15, 2004, Los Alamos National Laboratory (LANL) was ordered to stand down all but the most essential operations. This was due to the loss of two pieces of classified data and to a laser accident. These recent scandals are only the latest evidence of University of California's (UC) mismanagement at the Lab. In report after report, investigators have nailed the Lab for problems ranging from safety hazards, to security lapses, to environmental violations and to administrative failures. For instance, in February 2004, the Government Accounting Office (GAO) reported that breakdowns in management controls at LANL are analogous to those found at NASA, which led to the 2003 Space Shuttle accident. A key finding of the Columbia report cited NASA agency "culture" as contributing to the shuttle accident. The GAO was concerned that LANL has a similar agency culture that emphasizes programmatic concerns over safety concerns.

Widespread problems continue to reach into every corner of LANL. Recent disclosures by the Defense Nuclear Facilities Safety Board (DNFSB) state that even the very welds holding LANL together are suspect. Several 2004 LANL reports identified welding processes used on site that have not complied with national codes. LANL intends to implement a compliant welding program, now. This issue, like many others, begs the question -- what were they waiting for? Does it take an accident for UC to dip into \$2 billion-plus per annual budget year to fix a LANL problem?

Historically, accident and security problems have not seemed to get UC's attention enough to affect any real change at LANL. "Frankly, nobody understands how we have gotten ourselves into this mess," LANL Director Pete Nanos wrote after he ordered the stand down. Where has he been? The real question is if UC can ever manage LANL effectively enough to achieve a state where safety and security issues are driven more by insightful planning and less by events, such as accident investigations and security losses.

The following is a list of incidences at LANL in the broad categories of security, safety, the environment and management. This extensive rap sheet begs the question of why the University of California should be allowed at all to try again in managing the Lab.

ENVIRONMENTAL

Sept. 04 **The New Mexico Environment Department (NMED) releases final draft of "Order on Consent,"** hopefully leading to State-mandated cleanup after years of declining cleanup funding at the Lab.

Aug. 04 **Report states that Lab waste has reached Rio Grande.** Low concentrations of explosives and perchlorate have already reached the river from LANL.

Apr. 04 **Environment Department finds tritium in White Rock Springs.** This provides further evidence of need for comprehensive LANL cleanup.

Feb. 04 **NMED fines LANL \$1.4 Million for hazardous waste violations** uncovered in 2003 inspection. This is the 14th compliance order NMED has issued to LANL since 1993.

Feb. 04 **NMED fines LANL \$854,087 for hazardous waste violations** uncovered in 2001 'wall to wall' inspection.

Jan. 04 **Environment Department collects \$282,033 from LANL** to resolve numerous environmental violations found during surprise 1998 inspection.

Oct. 03 **Los Alamos disclosed improper radioactive PCB disposal at TA-54 Area G.**

Oct. 03 **LANL suspends shipments to the Waste Isolation**

Nov. 02 **NMED issues a Finding of Immanent And Substantial Endangerment to health and the environment** caused by Lab operations in a Corrective Action Order against LANL. DOE and UC file four lawsuits against that Finding and Order (now settled).

Jun. 02 **LANL pays a \$165,000 penalty to NMED for Hazardous Waste Law violations.**

May 02 **Cerro Grande Fire burns 48,000 acres, 7500 acres on Lab property.** The Lab is shut down for 10 days and the Los Alamos town site is evacuated. LANL failed to analyze the risk of wildfire in a 1999 LANL Draft Site Wide Environmental Impact Statement (SWEIS), but did so in the Final SWEIS only because of strong public comment. When the Cerro Grande Fire did break out, it closely matched the wild fire scenario in the Final SWEIS.

Feb. 02 **Lab lost up to 48,000 gallons of diesel fuel at TA-21 because of a leaky pipe.**

Jan. 02 **Stormwater samples collected by NMED find plutonium-239 levels about 100 times the levels that the Lab reported between 1995 and 1999 (pre-Cerro Grande Fire).**

Jan. 01 **Lab reported 50-gallon radioactive water**

Pilot Plant (WIPP). LANL may have shipped several drums to WIPP without certifiably demonstrating they were transuranic wastes.

Oct. 27/03 **LANL radioactive seepage reached the Rio Grande.** Low levels of radioactive cesium-137 detected along the Rio Grande.

Apr. 03 **NMED orders LANL to cleanup hazardous materials at Los Alamos Airport landfill.** Soils contained elevated levels of cesium, plutonium, Polychlorinated Biphenyls (PCBs), pesticides and lead. The site had no erosion controls to prevent contaminated soils from reaching the Rio Grande, nor was the site fenced to restrict public access.

Mar. 03 **NMED concerned with lab's impact on NM water resources.** This is due to a series of recent findings including the discovery of previously unknown springs with elevated levels of perchlorate, chloride, nitrate, tritium and uranium that discharge directly into the Rio Grande.

Jan. 03 **Tritium, nitrate and perchlorate discovered in a State-mandated monitoring well in Mortandad Canyon.**

Environmental continued.

aquifers. Lab states that saturated areas are segregated from the main aquifer by impermeable geologic formations.

Sept. 97 **LANL stated that pre-1960s plutonium had moved beyond its boundaries.** From Los Alamos Canyon, sediments make their way to the Rio Grande and Cochiti Reservoir.

Jan. 97 **LANL settles citizen's suit.** The lab admitted that 31 of its 33 major stacks emitting radionuclides to the air were not in compliance with the Clean Air Act for over six years.

Apr. 96 **Investigation showed the incidence of thyroid cancer in Los Alamos County rising** to a statistically significant fourfold elevated level during the late-1980s and early-1990s.

Jan. 95 **NM District Court finds LANL in violation of the National Environmental Policy Act (NEPA)** and orders that an environmental impact statement be prepared for a major nuclear weapons design facility.

Oct. 93 **Tritium found in Los Alamos County and San Ildefonso Pueblo groundwater wells** (deemed unusual because the groundwater was thought to be 1000 years old).

Feb. 93 **Tritium-contaminated water leaks from Omega West Reactor.** Amount and duration of time is unknown.

Jan. 93 **NMED issues to LANL two Compliance**

spill at the Defense Programs (DP) Site.

Oct. 00 **Tritium detected in Los Alamos County drinking-water-supply well.**

Jul. 00 **Perchlorate detected in Los Alamos County drinking-water-supply well.**

Mar. 00 **Lab detects perchlorate in shallow groundwater in Mortandad Canyon.**

Jan. 00 **500 to 1000 gallon spill of high-explosives-contaminated water at TA-16.**

Jan. 00 **NMED issues a compliance order to LANL, proposes a penalty of \$845,990.**

Nov. 99 **Lab finds tritium in Mortandad Canyon surveillance well.**

Jan. 99 **High explosive contaminants found in deep groundwater water samples, 4 times the EPA recommended health level.**

1999 to present **"Low level" radioactive wastes disposed at Area G, TA-54** after expiration of permit, which has been "administratively extended" by NMED since then.

Dec. 97 **Lab personnel find tritium in perched**

Orders. These are for WIPP wastes at Area G and storage, labeling, etc. at several locations.

Sept. 92 **Environmental Protection Agency (EPA) gives Notice of Violation to LANL for Land Disposal Restrictions.**

Jun. 92 **EPA cites LANL for inadequate storage of WIPP-bound mixed wastes.**

1992 **LANL press release claims that radioactivity from the Lab had never been detected in the Rio Grande.** It later was revealed that the Lab was playing semantics because plutonium had previously been found in the mud of the Rio Grande, not in the river water itself (plutonium is not soluble in water).

1997 **Dept. of Labor rules that LANL retaliated against a Clean Air Act whistleblower.** It ordered the Lab to raise his salary retroactively and pay \$49,000 in legal fees.

Nov. 92 **EPA issues second Clean Air Act Notice of Violation to LANL.**

Nov. 91 **EPA issues first Clean Air Act Notice of Violation to LANL.**

Up to the mid-1990's **Lab personnel consistently propagated the myth that deep groundwater contamination was impossible because of the "impermeable" tuff above it.**

Comments on The Proposed Risk-Based End States Vision For Completion of the EM Cleanup Mission At Los Alamos National Laboratory

By email to: remediation@lanl.gov
Remediation Services Project
P. O. Box 1663, MS M992
Los Alamos, NM 87545

Nuclear Watch of New Mexico submits these comments in two parts on the so-called LANL Risk-Based End States Vision. The first part is responses to quotes (in italics) from that document. The second part is comments from our technical consultant.

The Proposed Risk-Based End States Vision is no vision for cleanup. Instead it is the latest permutation in the long pattern of DOE and the University of California avoiding comprehensive cleanup at the lab, with the accompanying waste of taxpayers' money supporting an environmental restoration program that has been largely ineffective. However, this is not the fault of the environmental restoration program per se. DOE and UC management at the highest levels simply lacks the will to truly cleanup; instead working successfully year after year to engineer increases to the nuclear weapons programs budgets. "Cleanup" is to be given added funds only on the condition that New Mexico accepts LANL's "vision" of not cleaning up.

There is no fixing the LANL RBES Vision. Our distrust of it is so deep that we think the only remedy is the New Mexico Environment Department (NMED) prevailing in the legal fight that DOE and UC have initiated in the courts against the State's Corrective Action Order. We applaud Gov. Richardson for saying that New Mexico will not be extorted and look forward to that fight.

- The proposed goal is described as a "vision" of how the LANL campus will look when the Department of Energy (DOE) Environmental Management (EM) program mission is complete and the National Nuclear Security Administration (NNSA) assumes full responsibility for environmental management at LANL. §1, p. 1. It always amuses us to see the lab projected as another friendly UC campus that happens to design and help produce weapons of mass destruction. The "vision's" explicit purpose is to "cap and cover" the still-as-yet undetermined quantities and compositions of radioactive and hazardous wastes buried forever at the lab and then turn "cleanup" over to the nuclear weaponeers who produced the mess to begin with. The reader may understand our natural cynicism toward this general direction.
- The April 2003 DOE Policy 455, Use of Risk-Based End States, requires DOE EM sites to define and document a risk-based end states vision that is acceptable to regulators and stakeholders, and then to revise cleanup program plans as necessary to achieve that end-state in the most efficient manner. §1, p. 1. DOE Policy 455 states that the RBES Vision document must provide an executive summary that "will highlight the major hazards that will remain [and] the potential risks associated with those hazards, and the primary receptors." The omission of that vital information in this document is incredible. The Policy also states that "Site managers will establish communication approaches for working with stakeholders for all phases of this effort in conjunction with preparation of their site vision." This too was not done at the beginning stages. Thus, it appears that, in addition to all of the other deficiencies noted in these comments, the draft LANL RBES Vision document does not even comport with DOE policy.
- Uncertainties in source(s), nature, extent, transport, and fate of contaminants are very large and can never be absolutely eliminated. Risk-based corrective action provides an objective means

of managing uncertainties to the degree necessary and sufficient to make defensible decisions about cleanup actions. §1, p. 1. It is true that in cleanup uncertainties can never be absolutely eliminated (like the rest of life). However, Nuclear Watch of New Mexico contends that DOE and LANL have intentionally avoided serious steps to reduce those uncertainties. As evidence, if DOE/UC were truly interested in reducing uncertainties, they would embrace the intent of NMED's Corrective Action Order instead of vigorously resisting it at great taxpayers' expense. As more evidence, discussion of environmental restoration programs in the 1999 LANL Side-Wide Environmental Impact Statement was deemed to be "not compatible with the preparation of this SWEIS," thereby avoiding an excellent (if not required) platform for comprehensive discussion of cleanup at LANL.

From for being an "objective means", we think that the LANL RBES Vision is designed to set the framework for the lab meeting only what it deems to be minimally required for cleanup. A critical operative assumption under the RBES Vision is that the risks can be largely explained away through lab-controlled analyses using industrial standards to begin with. We believe the RBES Vision to be more a political tool than anything. It is certainly not a cleanup document, with it preordained turnover of too-contaminated sites to the NNSA (see below) and the obvious lack of will to cleanup material disposal areas (i.e., historic dumps).

- The risk-based end state vision describes cleanup goals that would be protective under the planned future uses described in two planning documents. The first is LANL's Ten-Year Comprehensive Site Plan which describes NNSA's facility and operations over a 10-year planning window; the second is the Land Transfer Report to Congress under Public Law 105-119... §1, p. 1. As the latter concerns limited land parcels that could be transferred from DOE ownership Nuclear Watch of New Mexico contends that for the sake of discussion here it can be largely dismissed. With respect to the Ten-Year Comprehensive Site Plan it should be noted the NNSA has deemed that to not be releasable to the public, and is in fact the subject of a Freedom of Information Act request by us (which we have also asked for year after year). Thus, what we believe to be the most important foundation document underpinning the LANL RBES Vision is being withheld from the public.

The fundamental issue here is over what future designated land uses will be. If LANL succeeds in having its territory designated as being for future "industrial use" it will thereby avoid cleanup being performed at far more stringent residential or agricultural standards. If it succeeds in doing so for a ten-year planning window it will likely succeed in doing so forever, in light of the planned turnover of "cleanup" functions to the NNSA and the return of federal budget deficits. The end result is that what cleanup there might be will leave quantities of contaminants orders of magnitude above what would be left under agricultural and residential standards (for more, see Mr. Franke's comments below).

- Once the final end-state goal is resolved with public and regulatory stakeholders, LANL will use risk-based decision analysis to objectively, defensibly, and cost-effectively align its remediation project plans to achieve that goal. §1, p. 1. The RBES Vision is not objective to begin with (nor do we think it defensible). Again, the document is more a political tool than anything else. It is certainly devoid of cleanup can-do's. We don't believe that the lab's desired final end-state goal of what is effectively non-cleanup can ever be resolved with the public and regulatory stakeholders (specifically NMED). Instead, we believe this will ultimately be resolved, for better or for worse, in court over the pending contest over the Corrective Action Order.
- Management of Operational Risks. §1, p. 3. Potential radioactive and toxic risks are briefly discussed. We find it curious that there is no discussion of biological risks given the lab's expanding biological research program and the newly constructed Biosafety Level-3 facility.
- The EM mission at LANL was initiated in 1989 and is scheduled to be completed in 2015 on the basis of its 2003 Performance Management Plan. §1, p. 4. We find the year 2015 to be an arbitrary date set by LANL and DOE. Further, the PMP is, in fact, an insubstantial basis (see our July 2002 PMP comments at <http://www.nukewatch.org/facts/nwd/LANLPMP.pdf>, incorporated herein).

Again, the course of the legal fight will decide the matter, not simply the declarations of the “accelerated cleanup plan” du jour.

- ...which would remedy one of the primary objections to the order, namely the lack of completion criteria. Footnote, §1, p. 4. As LANL knows, the NMED’s Corrective Action Order is essentially a gloried information request (albeit one with legal and regulatory weight). NMED claims that it may use the information obtained to order cleanup in an amended order or subsequent orders. As we believe real cleanup to be synonymous to “completion” we concede the point that the Order does not contain completion criteria. However, our hope and belief is that the Order will lead directly to cleanup in due time. As already stated, in our view the RBES Vision (and its progenitor the July 2002 Performance Management Plan) seek to avoid cleanup. Therefore, it is DOE and LANL that is far more culpable of lacking “completion criteria.”
- According to EPA Region VI, the source-control performance standard applies to “materials that contain hazardous wastes or hazardous constituents, that act as a reservoir for migration of contaminants to soil, sediment, ground water, surface water, or air, or as a source for direct exposure.” This implies that the source-control performance standard applies to contained or confined hazards (including storage tanks and associated plumbing, landfills, surface impoundments, and evaporation lagoons), but does not apply to media contaminated indirectly as a result of these sources (including air, surface soil, sediment, surface water, ground water, and biota). Therefore, investigations and assessments designed to support source-control decisions are limited to sites that meet EPA Region VI’s applicability criteria. §1, p. 6. This is certainly a convenient and sweeping interpretation for LANL. Cleanup of the landfills is already largely written off (see immediately below). Now indirect contamination is given similar treatment. Further, indirect contamination won’t even be investigated and assessed. That clearly preempts a lot of the need for cleanup.
- For the majority of the deeper subsurface material disposal areas (MDAs) [i.e., radioactive and mixed waste dumps], excavation is dangerous and/or impractical, and off-site disposal is unlikely or virtually impossible due to large volumes of deeply buried heterogeneous materials contaminated with a variety of constituents. Source control at MDAs is limited primarily to stabilization of existing caps. §1, p. 6. There you have it, “cleanup” consists mostly of “cap and cover” and walk away without well-defined long-term stewardship protocols.
- To streamline MDA investigations to support stabilization decisions, LANL developed a risk-based characterization process (ref MDA Core Document submitted to NMED). §1, p. 6. We requested that document. The Remediation Services Project Communications Specialist replied that it had been “withdrawn at NMED’s request and the documents should not have been referenced in the RBES Vision document.” This clearly calls into question the validity of both the risk-based characterization processes and the MDA [material disposal areas, i.e., waste dumps] investigations. These are major components of the RBES Vision, yet without related and valid reference they seem to be built on thin air.
- To further [sic, no “the’] streamline characterization process, models developed for the performance assessment and composite analysis for LANL’s operating on-site radioactive waste disposal facility [Area G] have been modified to account for release and transport of both hazardous and radioactive constituents. §1, pp. 11-12. An important part of MDA’s G authorization basis is the performance assessment and composite analysis (PA/CA). §3, p. 5. We requested the Area G Performance Assessment and Composite Analysis. The response was that it “became a controlled document and is unavailable to the public following the 9/11 tragedy.” Thus the public cannot be assured of the validity of the characterization and modeling. This also begs the question of what is the extent of release and transport of radioactive and hazardous constituents. Finally, what are the potential risks at Area G? Surely, by definition, they are high. Otherwise the dump’s Performance Assessment and Composite Analysis would not be controlled. It also calls into question the internal authorization basis for Area G, exacerbated by the fact that the dump does not have a closure plan as required by the Resource Conservation and Recovery Act.

- For cleanup sites located on DOE property, EM completion will coincide with the attainment of performance standards through remedies approved by the administrative authority. LANL intends for the final risk goal performance standard to meet the intent of the Risk-Based End States, which represents EM completion. §1, p. 9. We find this statement to be circular logic and self-justifying. It really does seem that the arbitrary termination of the EM program in 2015 is driving this logic, not real cleanup. It's as if the final risk goal performance standard will be tailored to meet that termination. And who is to tailor that standard? It will be the "administrative authority," either DOE or LANL. It is fortunate that DOE and LANL will likely not have the final say in this matter. For better or worse, this will be decided in the courts.
- Long-term performance monitoring and response actions to maintain the risk-based end state will be integrated into the NNSA environmental management system consistent with the requirements of DOE Order 450.1. The location, frequency, and duration of monitoring will be established using systems-engineering design principles, and a logical exit strategy will be defined to ensure that resources are not wasted on unnecessary data collection and reporting. §1, p. 9. This smacks of the nuclear weaponeers being ever so impatient to not only get out of serious cleanup, but also avoiding any long-term monitoring responsibilities.
- At LANL, EM sites that cannot be remediated to contaminant levels allowing unrestricted use (either now or in the future) will transition to the National Nuclear Security Administration (NNSA). §1, p. 10. No criteria are given for what and what cannot be remediated. Nor has LANL made a comprehensive effort to fully characterize and quantify the extent and composition of contamination. Further, LANL is vigorously resisting the State Order to do so. These and other factors (e.g., the coercive nature of "accelerated cleanup funding) demonstrate to us that the RBES Vision is mostly a procedural document that LANL will use to explain away the need for cleanup. It is certainly convenient for the lab, first of all, to position itself to be the arbiter of what can and cannot be cleaned up. Secondly, by virtue of what the lab deems that it can't clean up, have that site simply revert to the NNSA. This virtually guarantees that it will never be cleaned up.
- The risk-based remedy-selection process developed for these MDAs is nearly identical to the performance assessment/composite analysis process that established the authorization basis for radioactive waste disposal at LANL's MDA G. Indeed, seven of the legacy-waste MDAs (MDAs A, B, C, T, U, V, and AB) are included in the composite analysis for MDA G. For this reason, LANL expects that the long-term institutional management of the legacy-waste MDAs can be integrated directly into the MDA G performance assessment/composite analysis maintenance program already implemented by NNSA, which is likely to be integrated within the LANL environmental management program. § 3, p. 8. First, this is pretty much gibberish. From there, we already know that the MDA G Core Document was "withdrawn at NMED's request" and the MDA G PA/CA is a controlled document not available to the public. The lack of the required MDA G closure plan is already alluded to above. To then sweep up all of the other mentioned MDAs into the Area G net certainly does not engender confidence. In addition, we already know what the prescriptive remedy is anyway, i.e., cap and cover and not true cleanup (see Table 3.1-3 that immediately follows the above quote). Thus, the RBES Vision appears to us as just the paper platform (like the Performance Management Plan) for excusing cleanup away.
- The regional aquifer is the only source of drinking water for the local communities; alluvial and perched groundwater is not accessible. § 3, p. 9. Alluvial and perched groundwater may not be accessible now, but they could be in the future. In any event, they are State-protected resources for whatever may occur in the future. In the context of the currently deepening drought all water sources will become increasingly valuable. The cavalier approach in the LANL RBES Vision for potentially important future resources is yet another deficiency in the document.

Comments on "The Proposed Risk-Based End-State Vision for Completion of The EM Cleanup Mission at Los Alamos National Laboratory, Pre-decisional Draft, November 3, 2003, LA-UR-03-8254"

1. LANL's Risk-Based End-State Vision mandates restrictions of future use for generations to come. LANL's proposal is based on the DOE Policy 455.1, Use of Risk-Based End States, that was approved on July 15, 2003. According to this policy, the following key requirements have to be met:

- "Risk-based end states are representations of site conditions and associated information that reflect the planned future use of the property and are appropriately protective of human health and the environment consistent with that use."
- "A risk-based end state vision will be formulated in cooperation with regulators, and in consultation with affected governments, Tribal nations, and stakeholders ..."

LANL's interpretation of future land uses and management options results in the following scenario for LANL property:

- Keep environmental management (EM) sites that cannot be remediated under institutional control (e.g. area G)
- Remediate to allow industrial-use for mesa-tops and firing sites
- Remediate to allow recreational use for canyons
- Remediate to allow recreational use for parcels of land to be released to National Park Service and/or National Forest Service
- Remediate to allow residential use for 10 parcels of DOE property that were designated for transfer to either Los Alamos County or the Pueblo of San Idelfonso

A review of the maps that are provided by LANL suggests that access to most of the LANL site will either remain under institutional control or will be restricted in use for an undetermined time period. With the exception of some parcels, residential use is excluded; and agricultural use of all of the LANL property is not envisioned at all. The report does not contain any information as to how these restrictions will be guaranteed for decades or centuries to come. Without it, the proposal hardly deserves the term "end-state vision."

2. The final risk goal is not clearly defined.

According to Table 1.3-1, the final risk goal is defined as follows: "Providing 95% confidence that the probability of exceeding applicable thresholds is not greater than 10^{-5} for a period of 20 years under exposures consistent with future land use."

From reading the documentation, the risk level is ambiguously defined. Does the 20-year period referred to in Table 1.3-1 imply that 20 years of exposure will not lead to a cancer risk of greater than 10^{-5} ? If yes, this would be in contradiction to Table 3.1-4 that refers to a 10^{-5} risk level from groundwater consumption implying lifetime exposure.

Or does "probability of exceeding applicable thresholds is not greater than 10^{-5} for a period of 20 years" mean that an exposure, if existing over lifetime, should not exceed a risk of 10^{-5} and that the probability of exceedance is not greater than 10^{-5} ? If that is the case, why then is the scenario period limited to 20 years?

A final risk goal of 10^{-5} lifetime cancer risk is compatible with US federal laws. However, the determination of the final risk goal and the conditions to demonstrate compliance with it should be determined in a consensus process together with the residents and other stakeholders. Whatever goal may be chosen, it should be amended by a goal for the error associated with the risk estimate.

3. The risk goals for LANL are not internally consistent.

The performance objective of 30 to 100 mrem/yr for all pathways for the MDA G site is too high in comparison. Taking the cancer morbidity rate for low dose rates of 7.6×10^{-7} per mrem of whole body exposure (= committed effective dose equivalent, CEDE), a 50 year exposure to ~ 0.2 mrem/yr CEDE results in a lifetime risk of 10^{-5} . Consequently, 50 years of 100 mrem/yr CEDE is equivalent to an incremental lifetime cancer risk of $\sim 6 \times 10^{-4}$ or $\sim 1:1,800$. Hence, the risk that is equivalent to the upper limit of the performance objective is 60 times the final risk goal of 10^{-5} . The proposed criteria for MDA G clearly do not comply with this goal.

4. The choice of usage scenarios selected by LANL is not protective of human health and the environment.

The usage scenarios are crucial in defining the level of protection for persons exposed in the future. To illustrate this, Table 1 indicates results for soil cleanup goals selected from the 2002 EPA publication on Radionuclide Preliminary Remediation Goals (PRG) relative to the level for the strictest usage scenario. In all cases, the assumption of agricultural use results in the strictest cleanup goal. The assumption of industrial use (outdoor or indoor worker) would allow soil contamination levels that are up to five orders of magnitude larger than for agricultural use. Given these differences, selecting industrial use is inherent with the selection of the most lenient cleanup standard. This procedure is unacceptable because it does not follow the principle of keeping the exposures as low as reasonably achievable (ALARA).

Radionuclide	Residential use	Agricultural use	Outdoor worker	Indoor worker
Am-241	140	1	430	900
Cs-137	3,100	1	52,000	96,000
Co-60	41	1	68	150
Pu-239	430	1	2,400	4,300
Ra-226	290	1	5,500	11,000
Ru-106	37	1	1,500	2,800
Sr-90	170	1	22,000	40,000
Tc-99	43	1	150,000	300,000
U-234	1,600	1	13,000	24,000
U-238	1,600	1	14,000	25,000

Table 1 Soil concentration values relative to the most conservative usage scenario (agricultural use) as derived from EPA's Radionuclide Preliminary Remediation Goal (soil concentration for agricultural use = 1)

The implications for LANL can be further discussed using plutonium-239 in surface soil as an example. The LANL onsite mean value based on 12 routine measurements reported in the 1998 Environmental Surveillance Report of 0.23 pCi/g is 3.8 times larger than the EPA PRG value of 0.00608 pCi/g for agricultural soil. The PRG values for residential (2.59 pCi/g) or industrial usage (14.3 to 25.9 pCi/g) are much more lenient. EPA's PRG values are based on a 10⁻⁶ risk goal; they would be ten times larger for the 10⁻⁵ risk goal proposed by LANL. The evidence of plutonium-239 hot spots is documented in the maximum reported concentration of 2,500 pCi/g for Hillside 138 (Source: 1995 LANL RFI report). The contamination was removed in a "voluntary corrective action." Future site characterization and remediation activities will likely reveal further hot spots of plutonium-239. It is evident that the selection of usage scenarios and parameters for exposure modelling predetermines the extent of site characterization and remediation options.

Figure 1 Comparison of EPA preliminary remediation goals (PRG) for plutonium-239 in surface soil with soil levels reported by LANL

5. LANL fails to demonstrate that the inhalation of Pu-238 and Am-241 particles can be limited to the 10⁻⁵ risk goal.

Plutonium-238 and Am-241 are among the radionuclides that are present at the LANL site as demonstrated by measurements of air and soil samples. The likely mode of transport is resuspension

from contaminated areas. The specific activity for a particle with 1 μm aerodynamic diameter that consists of pure Pu-238 oxide particles is 2.8 pCi. In order to remain below the 10-5 risk goal, the annual effective dose should remain below 0.2 mrem/yr. Because the effective dose factor (type F) is 0.45 mrem/pCi, the inhalation of a single 1 μm particle of Pu-238 would deliver the risk goal dose for about six years. The specific activity for a particle with 1 μm aerodynamic diameter that consists of pure Am-241 oxide particles is 0.6 pCi; the effective dose factor is 0.36 mrem/pCi (type F). The inhalation of a single 1 μm particle of Am-241 will deliver the risk goal dose for one year.

If such particles are present at the LANL site, they would be difficult to detect. A review of this matter conducted by the author during the LANL Clean Air Audits did not resolve the issue; the existence of such particles could not be ruled out. In order to meet the risk goal, LANL should demonstrate how this issue would be addressed.

6. LANL should evaluate what it takes to remediate the property for residential and agricultural use. Rather than selecting a usage scenario first and planning the necessary steps of remediation on that basis, a prudent approach is to characterize the property and evaluate the impact if the property would be cleaned up to allow residential and agricultural use. The precise information on the nature and the costs of remedial action that would be necessary to achieve this should be provided for an informed discussion. After all, future generations of residents may have a different end-state vision of the property than LANL has at this time. If the legacy contamination can be removed so that residential and agricultural uses are possible in the future, it should be done. Anything less does not qualify for the term "end-state vision."

Heidelberg, February 26, 2004

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- End of Comments -

Respectfully submitted,

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Comments to the National Nuclear Security Administration On the Draft Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory

September 27, 2006

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Dear Ms. Withers:

Nuclear Watch New Mexico hereby submits these final comments to the National Nuclear Security Administration (NNSA) on the Draft "Site-Wide Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory" (hereinafter "DSWEIS").

Executive Summary

Among other things, through its stated preferred "Expanded Operations Alternative" of increased nuclear weapons research and production at the Los Alamos National Laboratory (LANL), NNSA proposes to:

- Quadruple the production of plutonium pits, the atomic "triggers" for today's thermonuclear weapons, from 20 to 80 per year.
- Because of increased production, radioactive bomb wastes will almost double, to be transported on public highways to the Waste Isolation Pilot Plant, the world's only permanent dump for bomb wastes, "coincidentally" also in New Mexico.
- Increase its storage capacity of "special nuclear materials, mainly plutonium" to 7.3 tons at the Lab. A decade ago the Department of Energy declared an inventory of 3 metric tons of weapons-grade plutonium at LANL.
- Create the infrastructure, including up to nine new or upgraded facilities (nearly half of them with multiple buildings) directly related to nuclear weapons programs or in support of them. This could enable Los Alamos to become the nation's permanent site for plutonium pit production. Even before this, Los Alamos is already the second largest production site in the American nuclear weapons complex.

Nuclear Watch joins with hundreds of fellow citizens and the Santa Fe City Council in opposing these plans.

Because of the many deficiencies in the current Draft SWEIS document we argue that NNSA must prepare a new Draft SWEIS correcting omissions.

We maintain it was a violation of National Environmental Policy Act regulations for NNSA to prepare a completely new SWEIS instead of the "Supplemental" specified in the Notice of Intent published in the Federal Register in January of 2005. Further, important reference documents are not incorporated into the substance of the DSWEIS, such as the Fiscal Year 2006 LANL Ten Year Comprehensive Site Plan. In some cases referenced documents are difficult for reviewers to access, such as the *LANL SWEIS Information Document Data Call Materials*, which is available only in hard copy at two locations. This Draft SWEIS is insufficient also in that it relies on numerous invalid, incomplete or future studies.

We suggest that through the expansion of plutonium activities and infrastructure, which the SWEIS seeks to implement, a *de facto* decision is being made to have Los Alamos become the nation's permanent, consolidated plutonium center.

This Draft SWEIS intentionally disregards reports and recommendations made by the Defense Nuclear Facilities Safety Board about the potentially high hazard operations at LANL and its demonstrably poor safety record. It is reasonable to assume expanded operations will result in more accidents.

The Reliable Replacement Warhead Program is becoming a means unto itself, justifying the resurgence and revitalization of the nuclear weapons complex. We assert that it is absolutely central to any credible LANL SWEIS that there must be full analysis of the programmatic, infrastructure, production and proliferation implications of the RRW program.

LANL is still burying its radioactive wastes in unlined dumps. This whole concept should be reexamined and a new DSWEIS must consider the benefits of lining Lab dumps. Also, the Lab's legacy of operations has created a witch's brew of hundreds of contaminants in the soils and perched aquifers at the bottom of canyons. A new DSWEIS must contain accurate and independent data on threats to the Sole Source Aquifer and the migration of contaminants into the Rio Grande.

We suggest that construction of new nuclear weapons facilities with significant inventories of Materials At Risk should cease until seismic risks are more completely understood.

The DSWEIS is misleading in that it does not fully report the amount of transuranic waste that would be generated under the Expanded Operations Alternative. This waste will turn the site into a permanent, large-scale transuranic waste dump.

Nuclear Watch New Mexico requests that other alternatives be analyzed in a new DSWEIS. Among these alternatives there should be an "Energy Security Alternative" in which LANL should initiate a Manhattan-Project-styled assault on the world's global warming, energy-economy-security complex of problems. Solving this global problem would do more for national security than expanded nuclear weapons operations ever will.

Again, the "consolidation report" was the main visible initiator of Complex 2030. Given the confluence of events, that is growing congressional momentum toward making LANL the nation's permanent plutonium pit production site because of fiscal constraints, the reported unlikelihood of building new nuclear weapons-related plutonium facility other than at LANL, and the consolidation

report's scathing indictment of the lack of pit production productivity at TA-55, it is not unreasonable to speculate that a commercial contractor could take over LANL's ever-increasing production missions as an entity separate from "the Laboratory." **A new DSWEIS must disclose any reasonably foreseeable possibility of a separate contractor assuming production responsibilities at LANL.**

Alternatively, perhaps NNSA feels that it has already met that need by awarding the Lab's new management contract to a limited liability corporation that now includes three commercial corporations. **In any event, a new DSWEIS must analyze and disclose how increased manufacturing efficiencies alone could substitute for the "Modern Pit Facility", resulting in Los Alamos becoming the nation's permanent plutonium pit production site.**

Socioeconomics

LANL's analyses of socioeconomic impacts are unverifiable and based on speculation. As the SWEIS says, "...it is not possible, as requested by one commenter, to verify projected socioeconomic benefits due to the lack of available data tied specifically to LANL's economic influence over the region." DSWEIS, p. S-23. Just because the data are unavailable, can the Lab speculate on this important topic? For this reason, the Lab must initiate an independent analysis of the socioeconomic impacts and republish this draft SWEIS.

For the most part, operations at LANL remained within the projections made in the 1999 SWEIS. Operations that exceeded projections, such as number of employees or amount of chemical waste generated from cleanup activities, produced a neutral or beneficial impact on northern New Mexico. A larger number of employees increases the tax base and results in a higher level of economic activity. DSWEIS, p. S-24. Please explain how increased chemical waste produces a beneficial impact.

Considering LANL positions are some of the highest paying positions in the region, the benefits associated with these positions in terms of increased revenues and taxes should more than offset any perceived drawbacks. DSWEIS, p. S-50. *These employees have had a positive economic impact on northern New Mexico.* DSWEIS, p. S-214.

Please state if Los Alamos County is expected to continue to receive a disproportionately large percentage of the economic benefits from the Lab and remain the richest county in the U.S. The DSWEIS must analyze whether alternative missions would be of greater economic benefit to all of northern New Mexico.

LANL's potentially adverse impacts on tourism must be analyzed. Tourism is a major contributor to Santa Fe's and northern New Mexico's economy. Please analyze the effects of a major accident at the Lab on tourism.

The construction costs of all proposed facilities should be given in a new DSWEIS.

Cleanup must not include “cap and cover” of unlined waste dumps.

The DSWEIS analyzed two options for LANL's legacy buried waste. The Capping Option would leave all radioactive and chemical wastes in place in the major disposal areas and cover them with a surface rain barrier. The Removal Option would remove all legacy waste from the ground.

The DSWEIS correctly notes that future cleanup decisions will be largely driven by the New Mexico Environment Department (NMED). However, internal Lab documents already point to predetermination, saying “Many contaminated sites will be remediated to industrial use standards, in part because cleaning up to residential or unrestricted use standards is prohibitively expensive.” Cleanup that will protect ongoing generations cannot be dictated by today's short-term fiscal considerations. If more money is needed for comprehensive cleanup, take it from the ever-expanding budget for the Lab's nuclear weapons programs. Don't generate more radioactive and chemical wastes when cleanup costs are already “prohibitively expensive.”

LANL still is burying its radioactive wastes in unlined dumps, in contrast to all other new State-regulated landfills in New Mexico. The 1999 LANL SWEIS allowed more unlined waste pits, called Zone 4, near the existing unlined waste pits that NMED may require to be exhumed. The whole concept of Zone 4 should be reexamined because waste volumes are substantially higher than in the 1999 SWEIS. A new DSWEIS must consider the benefits of lining Lab dumps.

LANL must not allow contaminants to reach the groundwater aquifer or the Rio Grande.

The DSWEIS states that recharge to the regional aquifer from the shallow contaminated perched groundwater bodies occurs slowly because the perched water is separated from the regional aquifer by hundreds of feet of dry rock. Is it suggesting, because the contaminants reach the aquifer slowly, that everything is OK? The fact is that tritium, perchlorates, chromium, and high explosives contaminants from Lab operations have already reached the regional aquifer. Lab computer models show a five-year travel time from the surface to the aquifer in some areas. LANL must prioritize protecting our precious aquifer.

Sadly, the interpretation of groundwater data is complicated by problems that affect the sampling wells. Specifically, the bentonite clay used in well drilling can mask many radionuclides and other contaminants. The use of circulating muds and other drilling fluids can have a similar effect by more complex mechanisms. The groundwater data in the DSWEIS could represent systematic underestimates of the actual contamination, and cannot be relied upon in the SWEIS.

Lab analysis of stormwater runoff and surface water also shows high contamination. Americium-241, strontium-90 and plutonium-238 & 239 in particular have been measured at levels up to ten times the drinking water standard. There is a witch's brew of hundreds of other contaminants in the soil at the bottom of the canyons. Contaminated stormwater either seeps into the ground, posing a threat to groundwater, or, in intense storm events, drains to the Rio Grande. During every storm event, these contaminants migrate closer to the Rio Grande. LANL must publish its raw data, including storm-by-storm migration reports and the totals and locations of all the contaminants released.

The Lab was self-serving in its choice of references that it used for this DSWEIS. Independent, outside research by experts such as Bob Gilkeson and George Rice were not included.

LANL must stringently minimize the use of our precious water.

Estimated water usage for the expanded alternative will exceed LANL's current capacity. Many DOE nuclear weapons facilities have been historically located next to abundant water sources, but LANL was not. When it was primarily a design laboratory, lack of water was not so large a problem. But now that the Lab is positioned to become the nation's plutonium pit production center, LANL is starting to covet the scarce water resources of the desert Southwest. The Lab plans to obtain more water rights, but what about the future? Will the Lab start buying up ever-increasing water rights, perhaps depriving others northern New Mexicans of their most precious resource?

Transuranic Waste Issues in the LANL DSWEIS

1. The DSWEIS is fundamentally inadequate and extremely misleading about transuranic waste generation and storage.

LANL's preferred Expanded Operations Alternative will turn the site into a permanent, large-scale transuranic (TRU) waste dump, a fact not mentioned in the document.

Buried on page 5-196 (Table 5-79), the DSWEIS estimates that the Expanded Operations Alternative from 2007 to 2016 would generate more than 25,000 cubic meters of TRU waste and the Modern Pit Facility would generate an additional almost 11,500 cubic meters of TRU waste during the same 10 years. The only TRU waste disposal site is the Waste Isolation Pilot Plant (WIPP), which in its most recent regulatory document (the Environmental Protection Agency Recertification Application) provides for 17,130 cubic meters of disposal capacity for LANL. Thus, the majority of the TRU waste that LANL would generate would not go to WIPP, but rather would very likely stay at LANL. The DSWEIS merely states: "Transuranic waste would be stored onsite until additional disposal capacity, at WIPP or elsewhere, was [sic] identified." P. 5-197. Of course, all of the TRU waste generation from continuing operations after 2017 would further add to the waste with "no disposal path" that would stay at LANL.

The DSWEIS is misleading in that it repeatedly does not fully report the amount of TRU waste that would be generated under the Expanded Operations Alternative. For example, Table 3-17 on pages 3-51 to 3-53, shows much smaller amounts of TRU waste transport, receipt and acceptance than 36,500 cubic meters. The table shows 8,400 cubic meters of legacy TRU, 2,000 cubic meters of newly generated TRU (200 cubic meters x 10 years), 190 cubic meters of additional TRU and 100 cubic meters of remote-handled TRU, for a total of 10,690 cubic meters. The table also states that an unspecified amount of TRU waste from DD&D and remediation activities would go to WIPP. Page 3-54 states that TRU wastes "are prepared for disposal and shipped to WIPP." There is no indication that any TRU waste, let alone most of it, could not go to WIPP.

Table 5-37 on page 5-128, entitled "Summary of Total ... Waste Generation Projections" shows that the total amount of TRU was for the Expanded Operations Alternative would be 25,230 cubic meters. The large amounts of additional TRU waste from the Modern Pit Facility are not included. Table 5-49 on page 5-143 includes the same misleading underestimate of the amount of TRU waste.

Table 5-50 on page 5-147 showing offsite TRU waste shipments also does not include Modern Pit Facility TRU wastes. That same misleading shipment information is shown on Table K-5, page K-25.

B. The draft SWEIS provides no analysis of the impacts of some of the TRU waste that is proposed for LANL.

One element of the Expanded Operations Alternative is to increase the type and quantity of sealed sources brought from other sites to LANL. However, the draft SWEIS does not include all of the off-site sealed sources as TRU waste even under the largest waste estimates. On page J-47, the draft SWEIS states: "At this point, sufficient information is not available to predict the total number of [actinide-bearing] sources to be managed." Thus, the draft SWEIS proposes unlimited amounts of TRU waste in those sealed sources could come to LANL with no adequate analysis of their environmental impacts. And since those actinide-bearing sources are legally barred from being disposed at WIPP because they are not defense TRU wastes, those sources have no disposal path and would likely stay at LANL.

2. The draft SWEIS does not acknowledge that LANL is already storing increasing amounts of TRU waste, nor does it adequately analyze their impacts.

Since the issuance of the 1999 LANL SWEIS WIPP, has opened. The draft SWEIS does not include any information about the amounts of TRU waste shipped to WIPP from LANL. Table 4-52 on page 4-149 shows that LANL made 47 shipments of TRU waste to WIPP from 2002 to 2004 but includes no information about the amounts of TRU waste (which was 344 cubic meters). Information from WIPP shows that from 1999 through 2004, LANL shipped 598 cubic meters of TRU waste to WIPP. Table 4-40 on page 4-134 of the draft SWEIS shows that during that same time period, LANL generated about 1,440 cubic meters of TRU and TRU mixed waste. Thus, even though TRU waste was being shipped from LANL, it was generating and receiving substantially larger amounts of TRU waste than it shipped. Thus, LANL's mission is increasingly one of being a long-term TRU waste site, a fact that is not acknowledged in the draft SWEIS and there is no adequate analysis of the impacts of that mission.

3. The draft SWEIS does not describe the substantial problems that have occurred in managing TRU waste and preparing it for shipment to WIPP.

According to the draft SWEIS under any of the three alternatives, LANL will ship its legacy TRU waste (8,400 cubic meters) as well as 2,000 cubic meters of newly generated TRU waste (200 cubic meters per year) to WIPP. Table 3-17, page 3-51. However, as already noted, the draft SWEIS does not acknowledge that in six years LANL shipped less than 600 cubic meters of waste to WIPP. During some of that period, LANL was prohibited from shipping TRU wastes because it did not comply with characterization procedures. The document describe the major changes that would need to be made in its operations in order to increase characterization and shipments of TRU waste by more than 10 times -- from an average of less than 100 cubic meters per year from 1999 to 2004 to more than 1,000 cubic meters per year from 2007 through 2016.

In fact, its past history shows that LANL does not have the capability to ship all of its legacy TRU

waste to WIPP, so the draft SWEIS statement that all legacy TRU will have been shipped to WIPP "by the end of 2015" (page 5-99) cannot be supported. Instead, the SWEIS must analyze the impacts of further increasing amounts of TRU waste being managed at LANL.

The DSWEIS states:

In Area G, NNSA needs to complete or move all storage operations and processing of transuranic waste for shipment to WIPP for disposal so that closure activities can be completed in compliance with the Consent Order. DSWEIS, p. H-63.

In the event of a wildfire that would impact LANL, and if the fire were to burn the waste storage domes at TA-54 and cause their contents to be released to the environment, the radiological releases from those waste storage domes would dominate the potential impacts to LANL workers and to the public from the fire. Should such an accident scenario occur in which the contents of the waste storage domes actually caught on fire and burned, the MEI would likely develop a fatal cancer during his or her lifetime and an additional 55 LCFs could be expected in the general area population. Any onsite worker located about 110 yards (100 meters) of the facility during such an accident would likely develop a fatal cancer during his or her lifetime. Taking into account the frequency of occurrence, the annual risks are estimated to be about 1 chance in 20 of an LCF for the MEI or for an offsite worker and an additional 3 LCFs in the offsite population. These risks assume that workers and members of the public do not take evasive action in the event of a wildfire. These risks would decrease as transuranic waste is removed from the domes and transported to WIPP for disposal. DSWEIS, p. S-53.

Conversely, as the waste in the domes increases, the risk would increase. Please analyze the risks on a year-by year basis of the inevitable increase of TRU waste in the domes. Please analyze the increased risks of rips in the domes.

Under the Removal Option, extremely large quantities of wastes would be generated, including low-level radioactive waste and transuranic waste. The estimated quantities of low-level radioactive waste and transuranic waste would exceed the disposal capacity currently planned for LANL and the current LANL WIPP allocation. Therefore, additional waste disposal capacity for both types of waste would have to be identified. DSWEIS, p. S-86.

These would have to be identified now, in this SWEIS. Because if there is no additional disposal capacity for TRU, which there isn't, then additional storage impacts at LANL need to be analyzed.

In 2003, the volumes of transuranic waste and mixed transuranic waste processed by the Solid Chemical and Radioactive Waste Facility exceeded 1999 SWEIS projections by approximately five times the projected volumes due to the repackaging of legacy transuranic waste for shipment to WIPP. DSWEIS, p. 2-57. This is an example of LANL inability to predict waste volumes. Can the stated waste volumes be relied upon?

Waste management impacts from LANL operations under the Expanded Operations Alternative are expected to increase due to heightened operations at the Plutonium Facility Complex and increased characterization and management activities in the legacy waste retrieval program compared to the

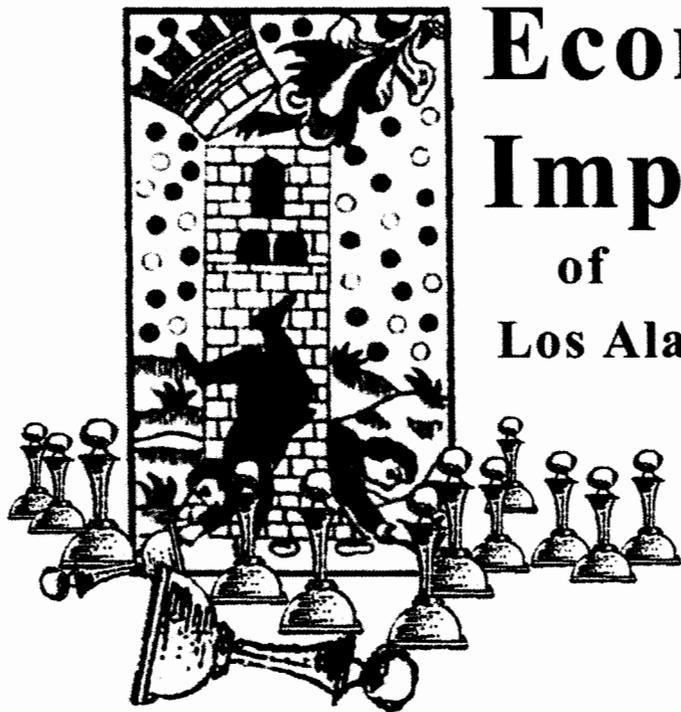
No Action Alternative. Although operational transuranic waste quantities are higher under this Alternative, waste disposal capacity at WIPP is expected to be adequate, assuming best estimates are realized. DSWEIS, p. 5-142. LANL is assuming, not scientifically analyzing. There is no room for assumptions in this DSWEIS.

To accelerate the processing of contact-handled transuranic waste from the fabric domes, DOE plans to install and operate three modular units at Area G to duplicate the capabilities provided by the Waste Characterization, Reduction, and Repackaging facility. In addition, processing functions would be consolidated in one of the large domes (such as Dome 375) to increase processing efficiency and speed. The net result is that 16 drums could be readied for shipment to WIPP in the same time that current operations at TA-50 can produce only one drum for shipment (DOE 2002a). DSWEIS, p. H-61. Dome 375 is full of drums and located over buried legacy waste. Is this the only alternative analyzed? What are the seismic implications?

Structures and processes for shipping contact-handled transuranic waste stored in the above-ground fabric domes to WIPP have been analyzed through the NEPA process in the 1999 SWEIS (DOE 1999a) and related Supplement Analysis (DOE 2002a) and the Environmental Assessment prepared for the Decontamination and Volume Reduction System (DOE 1999b), however, the retrieval and processing of transuranic waste in below-ground storage requires analysis through the NEPA process. DSWEIS, p. H-62. In other words, there is no plan yet for this process, yet LANL keeps implying that Area G will be closed by 2015.

Analyses of DOE Environmental Management
Economic and Environmental Issues in New Mexico

Section 2



**Economic
Impacts**
of
**Los Alamos National
Laboratory**

Nuclear Watch of New Mexico
December 2006

In the “Hungriest” State, The USA’s Richest County Is Fed by Nuclear Weapons Programs

In November 2006, the Food Assistance Nutrition Research Program of the U.S. Department of Agriculture released a national study of hunger in America. It showed that 16.5 percent of households in New Mexico repeatedly experienced “food insecurity” during the last three years, the highest rate in the nation. New Mexico has long bumped along as one of the five “hungriest” states, but now has hit rock bottom.

On a different path, the Los Alamos National Laboratory (LANL) is slated to receive \$1.48 billion for core nuclear weapons research, development, and production programs in Fiscal Year 2007. In all, LANL will receive \$1.8 billion from the Department Of Energy (DOE) and at least \$300 million from other federal sources. In other words, approximately two-thirds of the Lab’s total institutional funding is for core nuclear weapons programs, with another estimated 10% in support of those programs and only 6% (\$105.3 million) for cleanup and less than 1% for renewable energy technologies. Among other things, our country’s nuclear weapons programs are poised to develop the next generation of nuclear warheads and resume industrial-scale bomb production.

Who benefits from this total of \$2.1 billion in federal taxpayer money spent in Los Alamos County every year? **The County of Los Alamos has the highest concentration of millionaires in America** according to Kiplinger’s Personal Finance Magazine (April 2006). Kiplinger’s reported that 20.4 percent of the atomic city’s households had a net worth of more than \$1 million, not even including the value of their homes. A major factor in their wealth is the lucrative pension plans offered by the Lab.

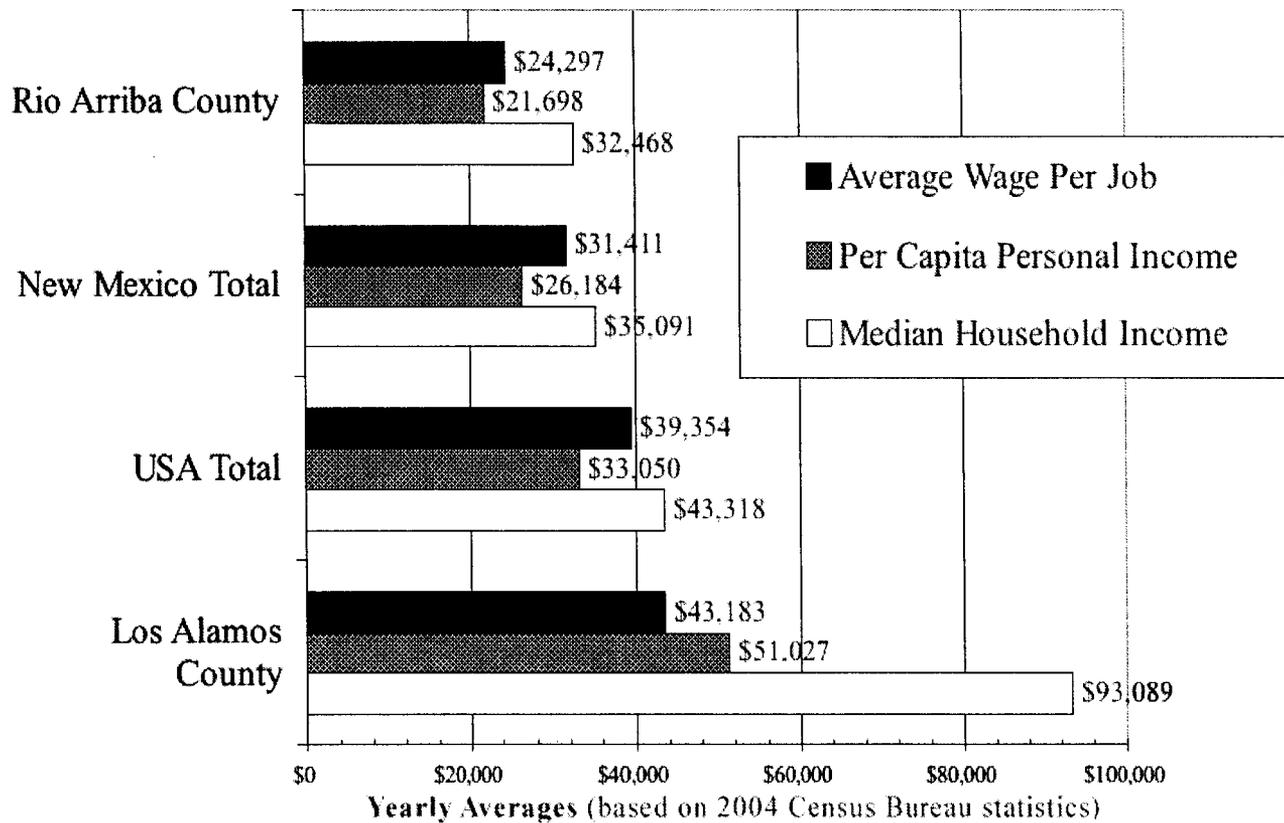
What’s Wrong with This Picture?

- Los Alamos County (LAC) has the “best quality of life of anywhere in America,” yet plans to spend \$1.4 billion on WMDs in FY07.
- New Mexico is rated as the “hungriest” state by the U.S. Department of Agriculture.
- NM has the highest percentage (26%) of children living in poverty, LAC has 2%.
- Out of 3,141 counties in the USA, Los Alamos County has the highest median family income.
- NM ranked 46th in per capita income in 2004, down from 37th in 1959.
- Average Lab and contractor employee wages were \$60,312 in 2005. The average wage in New Mexico in 2004 was \$31,411, 42nd in the country.
 - Lab and contractor employees receive ample benefits, including medical insurance.
- Forty-two% of New Mexicans under 65 have had no medical insurance at some point in the last two years (2nd worse in U.S.). NM is rated as the worst state for employer-provided medical insurance.
 - Los Alamos County public schools have received an annual DOE subsidy of \$8 million.
 - LAC’s population is 83.4% “white persons, not of Hispanic/Latino origin.” NM is the only state with a “minority” majority (54.6% Hispanic, Native American, and Other Minorities).

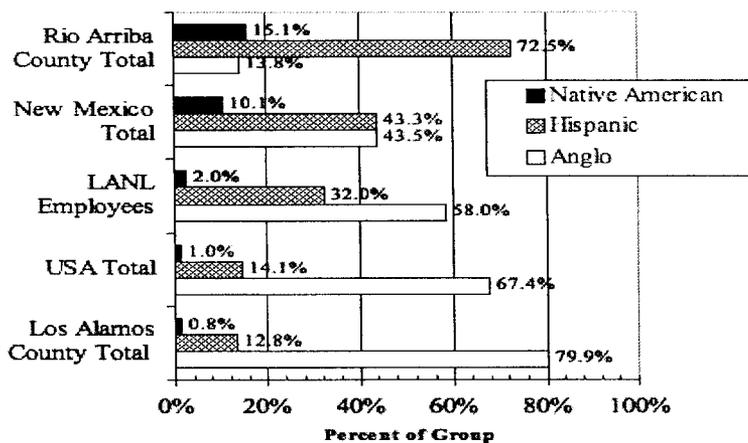
In May 2004 the *American City Business Journals* ranked Los Alamos County as having “the best quality of life of anywhere in America.” Its report used 20 different indicators such as income, unemployment, and educational levels. Furthermore, according to 2006 Census Bureau data, the County is number one in the nation in median household income. Forty-four% of County residents between the ages of 18 to 64 are employees of the Lab or its direct contractors. Nobody disputes the obvious: the Lab is the economic engine of the County. But ironically Los Alamos County’s #1 ranking in quality of life and highest median family incomes out of more than 3,000 counties in the USA is derived directly from the worst weapons of mass destruction, nuclear weapons. What kind of lesson is this to a world struggling to free itself of WMDs?

The benefits of nuclear weapons dollars don’t exactly pour off “The Hill.” In contrast, living conditions in Rio Arriba County, contiguous to Los Alamos County, are not so good. Nine percent of Rio Arriba County residents between the ages of 18 to 64 work at the Lab. In the same study that ranked Los Alamos County as #1 in living conditions Rio Arriba ranked 2302nd out of 3,141 counties in the USA. According to 2004 Census Bureau data, per capita income (meaning for individuals) in Los Alamos County is the 37th highest in the country, but for Rio Arriba it was 2,949th. In 2004, New Mexico ranked 46th in the U.S. in per capita income, down from 37th in 1959. The chart below gives a glimpse of some economic disparities across the region.

Wage and Income Averages



LANL Employee Ethnicities Compared



Los Alamos County is the “whitest” county in NM.

The figures in the chart at left incorporate 2004 Census data for Los Alamos and Rio Arriba Counties, New Mexico, and the USA. The 5,358 LANL workers that lived in Los Alamos County made an average of \$78,000 in 2005. The 2,607 Lab workers living in Rio Arriba County made an average of \$49,529.

Los Alamos County is about to reap a new gross receipts taxes windfall. New Mexico is one of six states that levy a gross receipts tax (GRT) of 6% or more for goods and services conducted within the state. LANL’s former manager, the University of California (UC), was exempted from paying NM GRT because it is “non-profit.” However, the new contractor, Los Alamos National Security, LLC, will pay New Mexico an estimated \$65 million in taxes. This is very good news for Los Alamos, which could see roughly 40% of the gross receipts tax windfall flow into its County coffers. Generally, 60% of all gross receipts tax revenues go into the state’s general fund while the remainder goes to municipalities and counties where the tax-paying business is based. Even though this windfall must be balanced against other impacts, it should be a huge gain for Los Alamos County worth around \$26 million a year.

As an added impact, according to the NM Taxation and Revenue Department subcontractors will no longer have to pay the tax since the general Lab contractor is now subject to GRT. In the past, when the Lab was operated only by UC, subcontractors who worked at LANL were required to pay gross receipts taxes to the counties where they resided. Now that the general contractor pays GRT, this will concentrate the benefits to the Los Alamos County government, making that entity rich just like its residents.

Unemployment and poverty are almost nonexistent in Los Alamos County. According to a May 2004 *Kids Count* report, in 2001 New Mexico dropped to the bottom amongst all states in the number of children living in poverty. In contrast, Los Alamos County children enjoy by far the least poverty in NM and one of the lowest poverty rates in the entire nation. In 2002, the County ranked 3,139th out of 3,141 counties in unemployment rates. In addition, the County ranked 9th in the least poverty for the entire USA. Los Alamos County also had the lowest employment and the least poverty in New Mexico, while neighboring Rio Arriba had the 9th highest unemployment rate and the 21st highest poverty rate in the state.

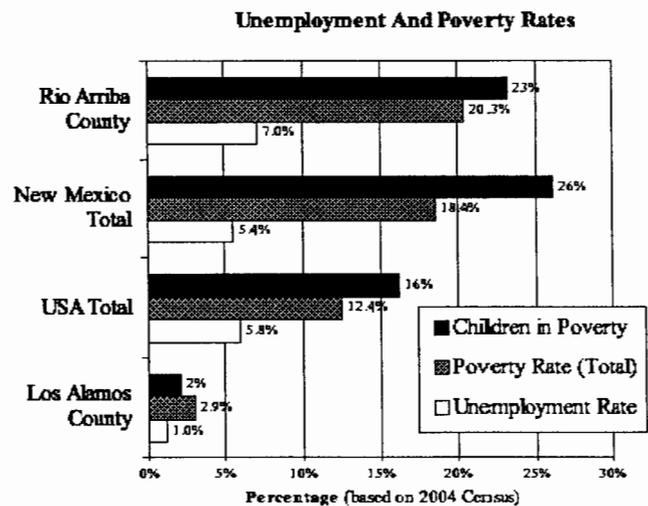
In addition to Los Alamos County being the richest county in the USA in terms of median family incomes, and the fact that the County government itself is about to grow rich, **the Department of Energy has directly subsidized the Los Alamos public school district.** This is the only program like this in the nation, a hold over from the beginning of the Laboratory. In 2005,

only 44% of LANL workers actually lived in Los Alamos County. Nevertheless, every year DOE gives \$8 million to the Los Alamos School District and none to Espanola or Santa Fe. Los Alamos public school students, whose families are already rich, arguably need that subsidy the least of any students in New Mexico. They have a 0.06% dropout rate through 12th grade, while New Mexico's average dropout rate is 5.3%. Los Alamos County's ACT scores have consistently been rated the best in the state. Los Alamos teacher salaries are among the highest in the state, as is the funding spent per student.

A yet deeper look at the Los Alamos County public school system is instructive. During 2005 – 2006, its school district received \$22.6 million in State funding, and in all had \$33.7 million in operational funds. Española is the small city that is the seat of Rio Arriba County. Students there arguably more desperately need the educational funding to help pull them from the area's pervasive socioeconomic problems. Unfortunately, funding for the Española school district has been continually cut since 2002. Students in the Los Alamos County school district are 76% non-Hispanic white while Española public school students are 89.9% Hispanic.

Cleanup at the Lab continues to be under funded, while legal expenses have unlimited funding. When the New Mexico Environment Department (NMED) issued a comprehensive draft Corrective Action Order against the Lab in 2002, DOE immediately brought two federal lawsuits and UC brought two state-court lawsuits against NMED. DOE and LANL have a virtually unlimited war chest of taxpayer dollars for its legal battles. When citizens groups, aggrieved employees or NMED sue LANL, DOE would almost always pick up the University of California's tab, including any punitive awards against it, whether the Lab won the case or not. In all, DOE reimbursed LANL contractors over \$6.6 million in legal costs from 1991 to 2001, clearly creating an unlevel playing field in the courts.

WMDs are supporting a privileged enclave in Los Alamos County that enjoys some of the best living conditions in the country. Conversely, that enclave is directly supporting WMDs that always have the potential of dramatically lowering the global living conditions of all. The affluence of Los Alamos County is steadily rising, while that of New Mexico has fallen relative to all other states. Whereas the New Mexican political leadership advocates increasing reliance on DOE funding as a path forward for economic development, the overall trends argues strongly against that. It is beyond the scope of this paper to suggest alternative futures for New Mexico, but clearly they should be explored and implemented.

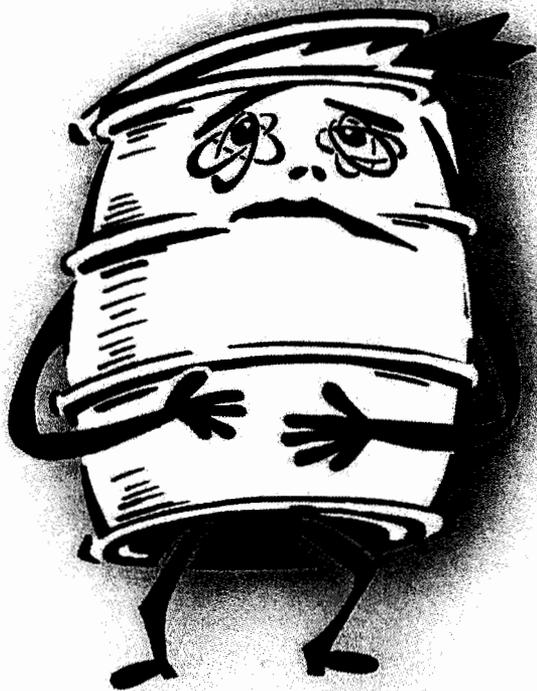


-Scott Kovac, Jay Coghlan, November 2006

Analyses of DOE Environmental Management

Economic and Environmental Issues in New Mexico

Section 3



Waste
Isolation
Pilot
Plant
Issues

Nuclear Watch of New Mexico
December 2006

WIPP Update

(also known as acronym soup)

The Department of Energy (DOE) has submitted its permit modification request (PMR) to make substantial changes to the Waste Analysis Plan (WAP) at the Waste Isolation Pilot Plant (WIPP) in southeastern New Mexico. This PMR is historically significant, especially as it is the first submitted by Congressional mandate. This request came from Senator Pete Domenici (R-NM) through Section 311 of the Energy Bill.

The changes are radical. The PMR states that DOE intends to eliminate important sampling and analysis requirements at WIPP—oversight measures that took several years of public comments and 19 days of public hearings to develop. This PMR does not protect human health and the environment; it substantially increases the likelihood that prohibited and dangerous waste would come to WIPP. What is DOE's rationale? Simply that Congress (that is Domenici) told them to make these changes.

What is at stake here is twofold. First: DOE wants to remove headspace gas sampling and analysis, solids sampling and analysis and visual examination from its methods of characterization and confirmation. Second:

this is a direct attack on the state's authority to regulate facilities such as WIPP. If Congress continues to put states in congressionally mandated headlocks, then the chance for real and safe cleanup throughout the nuclear weapons complex will be increasingly dubious.

Other PMRs submitted by DOE:

The Addition of Drum Age Criterion for New Containers. This PMR is basically a sequel to another that was submitted a while back— but DOE left us all hanging. The previous PMR, approved by NMED, asked that additional waste containers be added to the list of technically adequate shipping containers. What DOE didn't do was tell the public how long it wanted the containers to sit at generating sites to ensure that they were safe for shipping. This is what DOE is addressing now with this PMR.

Container Management Improvements. Ah, this one revives an old classic that DOE continues to bring back due to popular demand. DOE is asking to open up the amount of space available for them to store long-term waste above ground. Instead of having shipments come to WIPP as space allows, they want the opportunity for many more shipments to arrive, without having to worry about regulations that limit above ground storage for waste that's waiting to go underground. This would turn WIPP into a *de facto* above ground waste site, something that DOE previously promised never to do.

-Geoff Petrie

Whassup With WIPP?

For those of you just tuning into the whole nuclear waste disposal thing, the Waste Isolation Pilot Plant, or WIPP, is currently the only deep underground disposal site in the world for transuranic (TRU) waste. TRU waste is mostly produced during nuclear weapons manufacturing and is typically contaminated with plutonium. But WIPP can also accept waste that is contaminated with both plutonium and hazardous waste, which makes this a rather toxic dumpsite. The WIPP site is near Carlsbad in southeastern New Mexico. It was opened under dubious circumstances in 1999 when Los Alamos National Laboratory sent its first shipment of waste without a proper State permit, despite longstanding DOE promises to New Mexico and public outcry.

There are two regulating authorities over WIPP since the facility can accept waste contaminated by both radioactive and hazardous constituents. For the radiation side there is the federal Environmental Protection Agency (EPA). For the hazardous side there is the New Mexico Environment Department (NMED). Both agencies have been busy little beavers, but we'll get to that in a moment.

The "hot" topic lately concerns the Idaho Nation Engineering and Environmental Laboratory (INEEL), notorious for years now in its questionable practices of waste disposal at WIPP. Its most recent antics are just another notch in its bedpost. In mid-July, the Department of Energy (DOE) voluntarily stopped shipments from Idaho because INEEL had not been properly testing its waste to make certain it met waste disposal regulations. The problem started when INEEL decided to toss some waste drums that *had not* been adequately tested into shipments of drums that *had* been properly tested. Oops! Reports also surfaced stating that DOE knew for a full three weeks that the waste was not fully certified before they stopped INEEL shipments to WIPP. Way to look out for New Mexicans, DOE!

Of course, DOE denies these allegations. However, NMED has stated that it saw evidence as early as mid-June of problems with the INEEL shipments. The 2004 problem drums may have been shipped over several months, possibly as early as March. As its investigations continued, NMED discovered that problematic drums were likely shipped in 2002 and 2003 as well.

Clearly INEEL has a habitual problem with characterizing and certifying waste before it comes to New Mexico. So of course the State stepped up and read

DOE and INEEL the riot act, right? Well, that depends on your definition of the riot act. The State did fine DOE a record \$2.4 million, but as of September 20 INEEL has been given the OK to start sending waste to WIPP again. Really, NMED, do you honestly believe that INEEL is ready to ship to WIPP again?

Ironically the shortcuts ended up costing INEEL in the long run. Two hundred and seventy-one shipments were planned from INEEL in FY04 (fiscal year end on September 30)-- but as of September 19 INEEL had only been able to send 34 shipments to WIPP. Nationwide, DOE will probably again fall far short on its intended waste shipments to WIPP from all sites.

In other events, the EPA is now knee-deep in its WIPP recertification process. When the facility was first certified in 1998 a condition was that WIPP be recertified every five years during its operational lifetime to ensure compliance with safety requirements protecting human health and the environment. The EPA recertification process should be completed sometime in 2005.

DOE recently submitted a permit modification request to NMED to deal with the high-level nuclear waste disposal issue that was mentioned in the last issue of the *Watchdog*. DOE submitted its request without properly identifying over 100 million gallons of high-level radioactive liquid waste and sludge that can be found at Energy Department sites across the country. Current federal law prohibits high-level nuclear waste from being dumped at WIPP, but laws can be changed. The comment period for this request ended September 7; now we will see how NMED responds to the public's vocal outcry over this modification request.

--Geoff Petrie

See:

Fleck, John (2004, Sept. 20). State OKs More WIPP Shipments. *Albuquerque Journal*.
<http://www.abqjournal.com/news/state/226542nm09-21-04.htm>

Fleck, John (2004, Sept. 1). State Seeks Record Fine in WIPP Case. *Albuquerque Journal*.
http://www.abqjournal.com/news/state/216_72metro09-01-04.htm

Fleck, John (2004, July 25). State: DOE Knew WIPP Loads Bad. *Albuquerque Journal*.
<http://www.abqjournal.com/scitech/20290science07-27-04.htm>

Petrie, Geoff (2004, June). High-Level Waste: a ruse by any other name? *Watchdog* Volume 5, Issue 2.

-December 2004 Nuclear Watch Newsletter-

Update: WIPP

The hits just keep on coming. First, as we told you last newsletter, the Idaho National Engineering and Environmental Laboratory sent **over 100 drums** of waste to the Waste Isolation Pilot Plant (WIPP) that had been **incorrectly characterized**. Now the Hanford Site in Washington State has reportedly sent WIPP **over 600 drums** of waste that also violated the Environmental Protection Agency's (EPA's) rules.

Those sly dogs at the Department of Energy (DOE) thought that they could get away with sending EPA-restricted waste. Oddly enough, they more or less got away with it. The EPA has decided that the waste now underground at WIPP will stay, but they claim to be serious when they say that no more prohibited waste can go to WIPP. Boy, DOE must be shaking in their boots over that kind of accountability.

The problems with this situation are many. Is it more dangerous to the workers to actually take the waste out of WIPP than it would be to keep it there? The EPA apparently doesn't believe the Hanford waste endangers human health or the environment--but **does EPA really care** about health and the environment?

Another interesting Washington State issue: In the November elections its citizens overwhelmingly passed a ballot initiative preventing more waste from coming to Hanford from other DOE sites until it was able to take care of its own wastes. Well, a federal court has decided that DOE's legal complaint against that initiative has merit, and ruled to put the initiative on hold pending a final decision. So even when the people clearly vote their wishes, DOE tries to find an end run around it.

--Geoff Petrie

-Spring 2005 Nuclear Watch Newsletter-

UPDATE: WIPP



Back in the last issue of the WatchDog we told you about the more than 100 drums of waste that the Idaho National Laboratory illegally sent to the Waste Isolation Pilot Plant in Carlsbad, New Mexico. Well, the New Mexico Environment Department (NMED) fined the Department of Energy \$2.1 million for that mistake. Go, Environment Department! But just as we thought that NMED was actually taking a serious enforcement stance toward WIPP, our dreams and hopes were smashed into a thousand pieces. Or, as a colleague put it: "We were really just let down." Why? Because the Environment Department settled with DOE for \$90 thousand instead of the \$2.1 million.

The excuse for the Environment Department's cave-in is that DOE will now fund the Department's WIPP oversight office in Carlsbad-- at \$600,000 per year for the next three years. Hey, that isn't so bad, is it? Well, it is when you understand that DOE was

going to be paying for it anyway, regardless of this fine! The oversight office is an attempt to replace the now defunct Environmental Evaluation Group (EEG), an effective independent oversight group that DOE stopped funding last April.

One more (non-WIPP) item to mention: Remember Yucca Mountain in Nevada? It's the site that President Bush authorized to be a dumpsite for the high-level nuclear reactor waste problem we have in the US. Here's something pretty strange: apparently the folks assigned to estimate how quickly the waste would leak from the facility *falsified their results*. Now no one at DOE is giving any further information about the falsified data, but the leak estimates are about as crucial as any figures could be.

DOE had planned on having Yucca open and accepting waste by 1998, has spent over \$6 billion dollars on the project and had hoped at least to have a license by the end of the year. Well, that pesky license thing might have to wait a little longer now!

--Geoff Petrie

WIPP... MONSTER MOD!

In April the Department of Energy (DOE) submitted to the New Mexico Environment Department a new "monster" modification for the Waste Isolation Pilot Plant (WIPP). The modification has received the nickname "monster" because it combines three previously defeated modifications into one massive one.

This new modification will eliminate characterization (examination) of waste. This is a potentially dangerous change that could allow prohibited items to be shipped to WIPP. Instead of examining the waste, DOE intends to use paperwork, also known as "acceptable knowledge," to determine whether the waste may be disposed of at WIPP.

The "monster" modification also brings Remote Handled Transuranic (RH TRU) waste to WIPP, so hot that it needs to be robotically handled. Remember, RH TRU has

been brought up time and again by DOE, and every time it has been rejected. Little has changed since the last time we saw RH TRU as a modification. This waste is potentially very dangerous and DOE still hasn't been able to demonstrate a firm grasp on its contents.

DOE also wants to more than double the amount of waste that can be stored above ground at the WIPP site. We've seen this before too, and we still have the same objections. More waste being stored on the surface means more chances for accidents and contamination. Furthermore, there is no need for this additional storage if the WIPP site makes certain that the generator sites fully characterize the waste they send.

As you may have figured out by now, we are opposed to this "monster" modification. To find out more, and to learn what you can do, come to our WIPP page: www.nukewatch.org/wipp

--Geoff Petrie

State Government Weakens WIPP Oversight

The State of New Mexico has always had limited authority to regulate operations at the Waste Isolation Pilot Plant, a dump near Carlsbad for plutonium-contaminated nuclear weapons waste. State authority is currently on the verge of being further weakened, if the Environment Department (NMED) finalizes the "Monster Modification" to its WIPP permit. We've informed you in these pages about the progress of this permit modification request. NMED released the draft permit in November, despite significant public opposition and lots of unanswered questions.

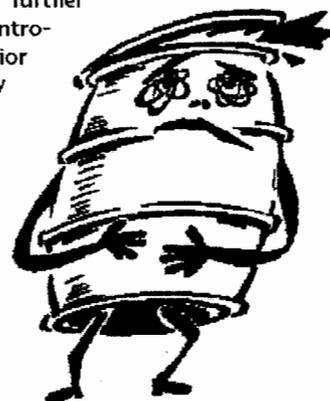
The US Department of Energy (DOE) has tried on many occasions to alter the agreement about what kinds of waste would go to WIPP, and how much testing they would undergo to verify their contents. "Legacy waste" from five decades of nuclear weapons production comes to WIPP from different DOE facilities--and offers uneven record-keeping.

Three previously rejected DOE permit modification requests somehow magically became more acceptable when combined into the "monster" now on the brink of approval:

1. Waste sampling and testing will be nearly eliminated. So-called "acceptable knowledge" (old written records) will now suffice. The permit used to require radiography, head-space gas sampling, or examination before shipping to WIPP.
2. Remote-handled (RH) waste, previously barred, could now be shipped to WIPP. High-level waste (HLW) can slip into the facility now by the simple act of renaming it RH waste. The draft permit thus opens the door to dangerous wastes once illegal to dump at WIPP.
3. Surface storage space in the aboveground facility at WIPP is being enlarged significantly. This means, coupled with the above changes, that more dangerous kinds of waste, and waste that has undergone little or no physical analysis to verify its ingredients, can also sit around longer above ground prior to emplacement.

Governor Bill Richardson and NMED publicly opposed these changes when they were initially proposed by Sen. Pete Domenici in 2003 and 2004. Don't forget: Gov. Richardson, back when he was our Congressman, was one of the authors of the original WIPP Land Withdrawal Bill, which offered assurances to New Mexicans that high-level wastes wouldn't come to WIPP. In addition, both state and federal regulations currently require "a detailed chemical and physical analysis of a representative sample of the waste" before it can even be shipped to any disposal site. These laws haven't changed or gone away; the Governor's opposition shouldn't either. It's a mystery why NMED is changing its tune and caving in to DOE.

As of Watchdog press time, NMED's "monster mod" public comment period is until January 23, 2006. It's possible it will be further extended and some of the controversial points re-negotiated prior to the public hearing in early March. You can count on us to keep you informed about any developments. If you haven't yet submitted comments, there's still time. We need to keep the pressure on our state Environment Department. They should not abdicate from their responsibility to maintain as much oversight authority as possible, while long-lived toxic radioactive and chemical wastes are trucked through--and permanently dumped in--our state.



P.S. Stay tuned. We have additional information on WIPP and the "monster mod" available at www.nukewatch.org.

--SP

WIPP Battles Continue... Partial Victory on the Dangerous Monster-Mod

In the last Watchdog, we summarized the bad draft "monster modification" permit issued by the New Mexico Environment Department (NMED) that incorporated virtually all major changes to the Waste Isolation Pilot Plant (WIPP) operating

permit that the Department of Energy (DOE) had requested. NMED also fast-tracked the public hearing to begin on March 8.

It appeared that the opposition of more than 2,000 people and numerous citizen organizations was being ignored. However, the schedule was delayed--first by a January 11, 2006 letter to NMED from Southwest Research and Information Center (SRIC) that pointed out that the administrative record was not available. Then negotiations were requested, as provided by NMED regulations, to try to resolve at least some comments that were the basis for the public hearing.

After 17 days of negotiations among NMED, DOE and its contractor (with Pete Domenici, Jr. as the lead lawyer), and citizens, including SRIC, Concerned Citizens for Nuclear Safety, and Citizens for Alternatives to Radioactive Dumping (CARD), there are now hundreds of changes to the draft permit. DOE's plan to ship waste to WIPP, and only then "confirm" that it met regulatory requirements, was dropped. The DOE request and draft permit provisions to substantially reduce waste examination was changed so that either x-raying or opening each container is still required. Remote-handled (RH) waste, so radioactive that it requires extensive shielding, will be allowed, though it must be fully examined and repackaged before shipment. The substantial increases in waste storage and disposal capacities were decreased, including about a 40 percent reduction in RH waste.

The public hearing is scheduled for May 31-June 6 in Carlsbad and June 7-9 in Santa Fe. Some of the negotiated changes will be contested by CARD, but NMED, DOE and SRIC will support the revised permit at the hearing. By about late September, NMED Secretary Ron Curry should make a final decision regarding which changes will be included in the permit.

--Don Hancock

Analyses of DOE Environmental Management

Economic and Environmental Issues in New Mexico

Section 4



Defending the National Environmental Policy Act

Nuclear Watch of New Mexico
December 2006

Summarized Comments on the NEPA Task Force Draft Report

February 6, 2006

Nuclear Watch of New Mexico (NukeWatch) is pleased to submit the following summarized comments on the Task Force's recommendations to "improve" the National Environmental Policy Act (NEPA).

Recommendation 1.1: We oppose the recommendation to create a new definition of "major federal action" based on the belief that CEQ regulations already offer sufficient guidance for federal agencies to decide what constitutes "major" or "significant" federal actions.

Recommendation 1.2: We disagree with this recommendation to add mandatory timelines for the completion of NEPA documents if it is to be legislatively mandated, but do agree that agencies should be strongly encouraged to efficiently complete NEPA documents.

Recommendation 1.3: We disagree with this recommendation to create unambiguous criteria for the use of Categorical Exclusions (CE), Environmental Assessments (EA) and Environmental Impact Statements (EIS) because we believe that sufficient guidance is already given by CEQ regulations.

Recommendation 1.4: We oppose this recommendation to address supplemental NEPA documents because the necessary provisions are already in CEQ regulations.

Recommendation 2.1: We oppose this recommendation to prepare regulations giving weight to local comments. As long as individuals or groups are American citizens or composed of American citizens, there is no such thing as "outside" groups and individuals.

Recommendation 2.2: We oppose the recommendation to mandate EIS page limits. The length of a NEPA document should be completely dependent upon the complexity of the subject. Also, site-wide and programmatic environmental impact statements are by nature lengthy.

Recommendation 3.1: We oppose this recommendation to grant tribal, state and local stakeholders cooperating agency status. Tribes historically have not participated in NEPA processes because in their view their interactions with federal agencies are taking place on a government-to-government level and not as an agency of the federal government. The proposed introduction of political subdivisions relates to the proposed introduction of economic interests made in Recommendations 4 & 5. We contend that they, if brought in as cooperating agencies, would further weight NEPA processes toward economic interests to the detriment of environmental considerations.

Recommendation 3.2: We disagree with this recommendation to prepare regulations that allow existing state environmental review process to satisfy NEPA requirements. As NEPA addresses federal actions we believe that only federal analyses will suffice.

Recommendation 4.1: We assert that there is no need to amend NEPA to address NEPA litigation. Our experience shows that we cannot rely upon the government to police itself in NEPA implementation, and citizen suits are a necessary resort. We staunchly oppose any attempt to limit that right.

Recommendation 4.2: We staunchly oppose this recommendation to add a requirement that agencies “pre clear” projects on the grounds that this could hinder or cut out entirely judicial interpretation and enforcement of NEPA

Recommendation 5.1 and 5.2: We vigorously oppose these recommendations to require that “reasonable alternatives” analyzed in NEPA documents be limited to those which are economically and technically feasible and to clarify that the alternative analysis must include consideration of the environmental impact of not taking an action on any proposed project. We strongly believe in principle that the rejection of any alternative should not be preordained, and certainly not legislated as such. We also believe the two Recommendations together would give overwhelming weight to economic interests.

Recommendation 5.3: We support this recommendation to promulgate regulations to make mitigation proposals mandatory as an added CEQ regulation, but not as an amendment to the Act itself.

Recommendation 6.1: We agree with the underlying principles of this recommendation to promulgate regulations to encourage more consultation with stakeholders after the scoping comments are received and before the draft EIS is too far along.

Recommendation 6.2: We have no objection to a consolidated agency record, which as a matter of course should be made public. We oppose the rest of the recommendation to codify CEQ regulation 1501.5 regarding lead agencies because existing statute and CEQ regulations not only already provide for the “horizontal” application of agencies’ authorities, but require it.

Recommendation 7.1: We oppose this recommendation to create a “NEPA Ombudsman” within the Council on Environmental Quality. We believe that public comment and agency response is the core of NEPA processes.

Recommendation 7.2: We oppose this recommendation to control NEPA related costs because we think it could be used to financially strangle NEPA processes.

Recommendation 8.1: We disagree with this recommendation to clarify how agencies would evaluate the effect of past actions for assessing cumulative impacts. Although investigating existing environmental conditions is one tool to use in accounting for past actions, it cannot be the only way to legitimately do so.

Recommendation 8.2: We disagree with this recommendation to prepare regulations that would modify the existing language in 40 CFR 1508.7 to focus analysis of future impacts on concrete proposed actions rather than actions that are “reasonably foreseeable.” First of all, NEPA is precisely meant to consider proposed actions before they are predetermined and become “concrete.” We believe that “reasonably foreseeable” is a prudent benchmark whereby to judge whether or not a possible future action should be analyzed for its potential cumulative impacts.

Recommendation 9.1: Although we think that there could be far better uses for the CEQ's time and resources, we have no particular objections to this recommended study of NEPA's interaction with other Federal environmental laws.

Recommendation 9.2: We do not oppose this recommendation to study current Federal agency NEPA staffing issues. The draft of this report should be available for public comment before the final is submitted.

Recommendation 9.3: We have no opposition in principle to this recommendation to study NEPA's interaction with state "mini-NEPAs" and similar laws, except that when dealing with federal issues the states' processes should conform to federal processes, and not the other way around.

We disagree with the conclusion that the statute, the National Environmental Policy Act itself, needs any amendment, and in fact think it a dangerous course to follow. As we have argued in these comments, NEPA has been good for the American public and environment and has brought tangible benefit to the federal government itself. We are especially concerned over the recommendations' apparent attempts to give more weight to economic interests, which all too often act diametrically to the environmental interests that NEPA serves to protect. We do concede that in some limited cases "modest improvements and modifications" could be appropriately made to Council on Environmental Quality implementing regulations that would not cause undue harm to the Act's original congressional intent.



**Written Testimony to the Committee on Resources
United States House of Representatives**

The Role of NEPA in the States of New Mexico, Colorado, Utah, Wyoming

August 1, 2005

Dear Committee Members:

I respectfully request that this testimony be read into the hearing record. I have had ample experience with the National Environmental Policy Act (NEPA). One example that I would like to particularly highlight concerns a 1999 Site-Wide Environmental Impact Statement (SWEIS) for Continuing Operations at the Los Alamos National Laboratory (LANL).

In the draft LANL SWEIS the Department of Energy completely omitted consideration of wildfire as a serious risk to the Lab. Due to my comments and others the DOE included a detailed wildfire analysis in the final SWEIS. Moreover, DOE began implementing some wildfire mitigation measures that soon proved to be invaluable.

As the Committee Members likely know, in April 2000 an extremely serious wildfire broke out after a proscribed burn went out of control in Bandelier National Park, ultimately burning some 48,000 acres. Both the Lab and the Los Alamos townsite were evacuated for a week. What is remarkable is that the Cerro Grande Fire closely followed the NEPA analysis in the final SWEIS.

A senior Lab official told me that during the height of the emergency LANL personnel would read that analysis as a game plan for how the fire would behave next. Most important were the fire mitigation measures implemented near Technical Area 54, which stores radioactive transuranic wastes in fabric air buildings. The fire ultimately stopped just some few hundred yards from TA-54. Had there not been some prior fire prevention measures the results could have been catastrophic.

I submit that the above is concrete demonstration of the value of NEPA in general and public comment in particular. It is unlikely that DOE would have conducted a wildfire analysis in the 1999 final LANL SWEIS without public comment. In the heat of the emergency, the Lab tangibly benefited from its existence.

Keeping in mind this example of tangible benefit to the federal government arising from the NEPA process, I respectfully urge the Committee Members to support and help preserve the National Environmental Policy Act.

Sincerely,
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