

the laboratory connection

volume 2 number 1

january 2001

your community's link
to information, opportunities, and people
at Los Alamos National Laboratory

a word from Director John Browne

Peace, Prosperity, and Friendship!

These are my wishes for our employees and our northern New Mexico neighbors in the year 2001.



We have learned much from the many and varied challenges faced by northern New Mexico and the Laboratory in the past year. Our Laboratory has come under fire, literally and figuratively, and now faces the task of refocusing and moving forward.

The Cerro Grande Fire ravaged the hills and canyons surrounding the Laboratory, as well as Pueblo and community property and lands, leaving vivid reminders of the wildfire's destructive power. But nature is resilient and in time the environment will recover.

It has been heartwarming to see the great kindness demonstrated by our neighbors in response. Gestures of goodwill have been shared with those affected through public and private charities, social service agencies, religious organizations, and private individuals. People have given of their own time and money to help the hundreds of individuals and families affected by the events of the last year.

Despite the challenges we have faced, we will not lose sight of why we are here. We have

continued on page 2



Lilliemae Ortiz, Pojoaque Valley Board of Education President speaks with State Representative and new Speaker of the House Ben Lujan during the December educational report rollout luncheon.

A Call for Major Educational Reforms in Northern New Mexico

The Northern New Mexico Council for Excellence in Education (NNMCEE) and the Los Alamos National Laboratory (LANL) Foundation issued "The State of Education in Northern New Mexico" report in December 2000. It recommends including community evaluation of local schools, more public involvement in schools, higher teacher salaries, applying advanced information technology, and meaningful accountability.

The report states that a recent Albuquerque Journal poll indicated that 40% of voters in New Mexico ranked education as the number one priority for the State. Over half of the State's general fund is spent on education. Yet in spite of the level of expenditure and employees who are caring, compassionate, and committed, the education provided to many students in northern New Mexico schools is substandard and in crisis. The report cites the following recommendations as crucial to promoting positive educational reform:

continued on page 2

Peace
continued from page 1

thousands of loyal, talented and, dedicated people at the Laboratory — who reside in and are a part of our culturally-rich and diverse regional community. We are proud of our national security mission, and we celebrate our many scientific and programmatic accomplishments. As we continue to work together, Laboratory, employees and community, I am optimistic about the future of the Laboratory.

Please accept my personal best wishes for the New Year. I am proud to be part of this wonderfully unique and diverse place called "Northern New Mexico."

Educational Reforms
continued from page 1

1. **Communities need to perform their own evaluation of the condition of education based on an understanding of their students' characteristics, achievement levels, and resources.**
2. **Public involvement in education must increase, and accountability must be established at all levels.**
3. **Public education must engage in partnerships and collaborate with regional employers to ensure that the needs of workforce development are met.**
4. **Teacher and other salaries must be increased to the regional average with the long-term goal of increasing salaries to the national average.**
5. **Advances in information technology must be applied to improve education and mitigate rural isolation.**
6. **Accountability must be meaningful and appropriate for each institution.**

Foundation President and Chemistry Division Director Al Sattelberger, Kurt Steinhaus, director of the Science and Education Program Office at the Lab, and Frank Carrasco, the consultant who compiled the report, were among those who spoke at a luncheon at the La Fonda Hotel in Santa Fe. Guests included members of the State Legislature and the news media. The report was sponsored by NNMCEE and the LANL Foundation.

The Northern New Mexico Council for Excellence in Education is a

catalyst and an advocate for education and workforce development in Northern New Mexico. NNMCEE is composed of university and community college presidents, northern New Mexico school superintendents, University of California representatives, the State Department of Education, local community and educational non-profits, Laboratory leadership and the LANL Foundation. Together they work toward improving educational performance in schools.

Nonproliferation and International Security Center Dedicated



Architects rendering of the new Nonproliferation and International Security Center.

After years of planning and coordination, the site of the Lab's future Nonproliferation and International Security Center (NISC) was dedicated in mid-December. Congressional supporters and dignitaries from the Department of Energy, National Nuclear Security Administration, including its director, General John Gordon, construction partner Hensel Phelps, and the Nonproliferation and International Security (NIS) Division, among others, dedicated the building site at the corner of Pajarito and Mercury roads at the Lab.

The 163,775-square-foot building, scheduled for completion by April 2003, will be

home to several NIS groups. The new facility also will house much of the arms control, treaty verification, nuclear safeguards, nonproliferation, and weapons assessment functions of NIS Division. The facility will have a full basement plus four stories above ground and will house 465 people in spaces designed for technical and administrative offices, light laboratories, light manufacturing, special security, and support activities. The laboratories will be for physics, electronics, optics, instrumentation development, computer, intelligence, and other uses.

Maintaining a Community Tradition

Headaches and hassles come with the job of deciding who gets how much water in northern New Mexico, especially when it's dry, but three Lab employees have found that it also brings great personal satisfaction. Ken Salazar, Bob Lopez and Rick Velasquez are the commissioners of the La Mesilla Community Ditch Association, which distributes irrigation water from the Santa Cruz River to some 340 users in and around the town of La Mesilla.

Lopez, a training manager in the Security and Safeguards division and the association treasurer, said the usual disputes and complaints about water allocation have been heightened in recent years by near drought conditions. "I've been a farmer at the same place since I was a little boy, and this (water shortage) is the worst I've ever seen," he said in late summer. "We're managing a very scarce resource, and it keeps getting scarcer."

The changing nature of farming at La Mesilla, a small Rio Arriba County community near the confluence of the Rio Grande and Santa Cruz River, has also impacted the association's job, said Salazar, a chemist in the Lab's Polymers and Coatings group and chairman of the association. "It was easier a few years back when the farms were generally 20 acres or so," Salazar said. "Now, they're sub-divided into 20 one-acre plots, so just keeping track of the paperwork has become a monster."

Irrigation ditches, or acequias, have played an important role in New Mexico's development. In early Spanish settlements, residents typically lived clustered in a village surrounded by cultivated land and pastures. Families depended on small, irrigated tracts of land, and tight control over the distribution of the water was necessary to survive. By 1700, about 60 ditch associations were operating in New Mexico, according to the



Lab employees Bob Lopez, Ken Salazar and Rick Velasquez, left to right, get their hands dirty and feet wet while checking the water flow in the Santa Cruz River. It's just part of the job of being a commissioner of the La Mesilla Community Ditch Association.

State Engineer's Office. By 1900, the number had risen to about 400. Now, there are about 800 community associations in the state.

The La Mesilla association is governed by bylaws specifying, among other things, that the members elect the commissioners for two-year terms. Salazar has served seven years, while Lopez is in his first year. Velasquez, an environmental technician in the Ecology group and the association secretary, has been a commissioner for three years. The commissioners set policy, provide overall direction and determine irrigation schedules, while the day-to-day operations of the association are handled by an executive officer called the mayordomo. At La Mesilla, the mayordomo is Lab retiree George Velasquez.

In addition to dry conditions and land-use changes, the commissioners must contend with developers who buy water rights and then sometimes sell them to commercial users, environmental groups seeking to re-establish historic flows of water in rivers and pueblos claiming rights to water. They also must deal with farmers who divert water illegally or

block their neighbors' water supplies.

So why would a person want to put up with the hassles of a volunteer, time-consuming job as a ditch association commissioner? "Water holds a special place for me, and I want to make sure the acequia tradition is never lost," said Salazar. "I think everybody should give a little back to their communities, and this is my part."

The commissioners also are proud of the changes they've brought to association operations in recent years. The association has changed from what Salazar calls an "old-boy network" to a democratic system. "There are more people coming to the meetings, and they believe that we're spending the money wisely and running things honestly," he said. "They're giving us credibility and respect."

The three commissioners are grateful that the Lab allows them to take community service time for association business.

Atlas Ready to Rock the World



Like its powerful mythological namesake, whose strength allowed him to bear on his back Earth and the heavens, the Laboratory's Atlas machine has become a force in the scientific world.

On December 15th, the Atlas pulsed-power generator successfully discharged 28.7 million amperes of current into a test load and completed its acceptance testing. The shot duplicated the world record for current produced by a capacitor bank with power to spare.

Since September 2000, Atlas operators have been firing incrementally more powerful shots, first with one-twelfth of the machine, then one-third, two-thirds, and most recently with the full machine. In the most recent test, the capacitor bank was discharged from only 75 percent of its design voltage and is likely to produce more than 30 million amperes when used to accelerate imploding liners for weapon-physics experiments.

According to Susan Seestrom, Physics (P) Division director, "The \$48 million Atlas machine is expected to quickly become a valuable tool for stockpile stewardship experimentation. The Atlas construction project began in 1995 and has, so far, been

an outstanding project management success for the Laboratory by meeting construction and safety requirements while remaining on schedule and within budget." The Applied Physics, Dynamic Experimentation, Project Management, and Engineering Sciences and Applications divisions also contributed to the project.

Under the current plan, the powerful Atlas will conduct physics experiments for the Stockpile Stewardship program for the next 17 months at Los Alamos before being disassembled and moved to the Nevada Test Site. After being reassembled, certified, and prepared for continuous operation at the Test Site, Atlas will continue its mission supporting Stockpile Stewardship as a tri-lab (Lawrence Livermore, Sandia, and Los Alamos national laboratories) resource, and as a state-of-the art research facility providing experimental opportunities to investigators from many laboratories and academic institutions.

Lab Receives Electric Powered Pickup Trucks for Its Fleet

The Lab has received the first eight of 20 new electric-powered Ford Ranger EV pickup trucks that will go into its fleet. Powered by lead-acid batteries, the electric trucks will be tested as a potential alternative to petroleum-fueled vehicles, explained Brett Ray of Property Management. "The 1999 Ranger EV produces no smog-contributing emissions," said Ray. "In addition to the environmental benefits, electric vehicles cost less to operate, require less maintenance and have improved energy efficiency compared to gasoline-powered vehicles of similar type and size." The trucks have a range of about 60 miles and a top speed of about 75 mph, according to information provided by Ford Motor Co.

The trucks' 39, eight-volt sealed lead acid batteries sit on a special compartment underneath the frame of the truck. The truck can be plugged into a regular 220 volt circuit; charging takes about six hours. A power cord from a 220 volt outlet attaches to a plate on the front grille of the truck. A gauge on the dashboard indicates the number of miles the truck can be driven before recharging. The range varies with driving conditions. The truck has no gas tank and doesn't require motor oil.



One of eight electric-powered Ford Ranger pickup trucks is driven off a transport truck at the Johnson Controls Northern New Mexico heavy equipment shop in December. The Lab is scheduled to receive an additional 12 electric-powered pickup trucks. The vehicles will become part of the Lab's fleet.

Independent Audit Confirms Lab Compliance with Federal Clean Air Act in 1999

An independent audit of radioactive air emissions from the Laboratory confirmed that the Laboratory was in compliance with the federal Clean Air Act for radionuclides in 1999, and further stated that the Laboratory's compliance program "could be considered as a model for other DOE facilities."

The audit, performed by a team led by John E. Till of Risk Assessment Corp. of Neeses, S.C., began last June and was the second independent technical audit of the Laboratory's radioactive air emissions compliance program. The audits are part of a settlement of a lawsuit brought against DOE and the Laboratory by Santa-Fe-based Concerned Citizens for Nuclear Safety. A consent decree that dictates conditions of the settlement was announced in January 1997. It requires the DOE to pay for as many as four independent technical audits.

The first independent audit concerned radioactive air emissions from the Laboratory in 1996. In that audit, Till's team concluded that the Laboratory had not exceeded the maximum offsite dose allowed by the Clean Air Act; however, the team did not believe that the Laboratory was in full compliance with some technical and regulatory requirements of the act – a conclusion disputed by Laboratory officials.

Till announced results of the second audit at December public meetings in Santa Fe, where he released the audit team's findings. Till and his team concluded in their second audit that "LANL is in compliance with [the federal Clean Air Act for radionuclides] for the year 1999." Under the Clean Air Act, the Laboratory is restricted to a yearly maximum radiation dose of 10 millirem from radioactive airborne emissions to members of the public.

The audit team confirmed that in 1999 the Laboratory's maximum annual offsite dose was 0.32 millirem. For comparison, a person living in northern New Mexico typically receives a one-millirem dose of radiation each day from the sun, cosmic rays and other naturally occurring radioactive sources.

Till and his team's audit report goes on to state, "The audit team commends LANL for their implementation of recommendations provided in the first audit and also the exemplary spirit of cooperation they have shown during this audit to make it an open, thorough, and responsive process. Furthermore, the [radioactive air emissions] compliance program at LANL and this audit process could be considered as a model for other DOE facilities. Credit for this achievement also is due to CCNS, who, as a citizens' organization and plaintiff in a lawsuit against DOE, helped to initiate the audit and designed its format."



John E. Till (left) of Risk Assessment Corp. of Neeses, S.C., shares a light moment with Dennis Erickson, director of the Lab's Environment, Safety, and Health Division just before a public meeting to present results of an independent technical audit of the Lab's radioactive air emissions in 1999.

Congratulations Los Alamos National Bank!

In November, Los Alamos National Bank (LANB) was honored with the most prestigious award for performance excellence in the entire nation – the Malcolm Baldrige National Quality Award. LANB took national honors in the service category. The program, managed by the National Institute of Standards and Technology, had never before awarded a bank with its highest honor. The Laboratory holds high the significance of LANB's achievement. LANL is an active participant and member of Quality New Mexico, which has a proven track record for promoting quality and excellence among business, healthcare, government, and education communities.



Santa Clara and Lab Sign Agreement. Santa Clara Pueblo Governor Denny Gutierrez (left) and Dick Burick, deputy Laboratory director for operations, shake hands in December after signing an agreement that will help facilitate and encourage communication between the Lab and the pueblo during emergency situations. Under the agreement, the Lab will provide information to the pueblo and provide updates if an emergency situation arises that potentially could affect the pueblo or its members. Conversely, the pueblo will provide the Lab with news about an emergency situation if it potentially could affect Lab operations. The agreement will be reviewed annually and if necessary, modified upon mutual agreement of the two parties. The Laboratory has begun development toward an identical agreement with Pueblo of San Ildefonso Governor Perry Martinez.

Great Eats, but BUSY Streets!

You wouldn't notice it from this time-lapsed photo taken of busy State Road 502 across from San Ildefonso's Totavi gas station, but there's a new Taco Bell food service at the station! And Pueblo Governors from both San Ildefonso and Santa Clara are taking the occasion to remind rush-time drivers to and from Los Alamos to drive with extreme caution and courtesy while commuting.

Numbers of traffic accidents and several deaths along both State Roads 30 and 502 have prompted Pueblo officials to ask the Laboratory for help in reminding commuters that life is precious – and the possibilities of losing your life or taking another's are not worth the risk of driving carelessly.

Last year's summer months were witness to particularly high heavy-truck traffic on both state roads for emergency rehabilitation efforts from the Cerro Grande Fire, and this has continued in the fall and winter months thanks to welcome rebuilding of Los Alamos homes. On a year-round basis, however, school buses and residential traffic from Santa Clara and San Ildefonso residential communities along State Road 30 in particular continue to face the challenge of engaging in heavy traffic.

Santa Clara and San Ildefonso Pueblo officials are asking Lab employees and others who drive on State Roads 30 and 502 to use caution and courtesy



and display patience while commuting. The Lab also encourages employees to show respect to fellow drivers, and to Santa Clara and San Ildefonso residents who reside in housing areas along these routes.

By the way, Totavi's Taco Bell is initially open 10 a.m. to 8 p.m. during this winter's season!

Inside

A Call for Educational Reforms

NIS Center Dedicated

Maintaining a Community Tradition

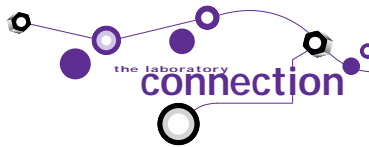
Atlas Ready to Rock the World

Electric Powered Pickup Trucks

Lab Compliance with Clean Air Act

Pueblo and Lab Sign Agreement

LANB Wins Prestigious Award



Mail Stop A117
Los Alamos, NM 87545

The Laboratory Connection, a monthly publication for northern New Mexico, is published by the Information Management Division and the Community Relations Office.

The staff can be reached by e-mail at community@lanl.gov, by telephone at 1-800-508-4400, by fax at (505) 665-4411 or by Laboratory interoffice mail at Mail Stop A117.

Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by the University of California for the US Department of Energy under contract W-7405-ENG-36. All company names, logos, and products mentioned herein are trademarks of their respective companies.

Reference to any specific company or product is not be construed as an endorsement of said company or product by the Regents of the University of California, the United States Government, the US Department of Energy, nor any of their employees.

Editor: Christina Armijo

Contributing writers and photographers: Public Affairs Office staff contributed to this publication.

Los Alamos
NATIONAL LABORATORY

Los Alamos, New Mexico 87545
A U.S. Department of Energy Laboratory