LAB NEWS
VOL. 45, NO. 25 SANDIA NATIONAL LABORATORIES DECEMBER 17, 1993

Totals $1.4 Billion

Labs' FY 94 Budget: 'Steady' Is the Word

Some work is expanding and some is shrinking, but altogether "steady" describes Sandia's FY94 work and budget situation.

Figures provided to the LAB NEWS by Resource Planning and Analysis Center Director Dick Shepardson (10400) currently estimate the operating budget at $1.4 billion. The budget for FY94 (Oct. '93 through Sept. '94) is based on data generated by the Labs' three sectors: Defense Programs (DP), Energy and Environment (E&E), and Work for Others (WFO).

In the DP sector, Jim Ney of DP Program Office 5003 says, "The general decline in traditional DOE nuclear weapons activities is offset by growth in technology transfer initiatives and arms control activities."

Dan Hartley, E&E Sector Manager and VP-6000, says, "We anticipate growth in the E&E Sector similar to prior years. Our program managers are placing special emphasis on the new opportunities presented by DOE in their thrust areas and tying those thrusts with Labs-wide capabilities and cross-division teams."

Sam Varnado (9900) of the WFO Sector Office points out that although a large percentage of Sandia's WFO funding is Department of Defense [DoD] related, Sandia has a large carryover

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WHOLE LOTTA SHAKIN' GOIN' ON — When New Mexico State University researchers needed a bridge shaken up, they asked Sandia's Experimental Mechanics Dept. 2741 for help. On the old I-40 Rio Grande bridge, Randy Mayes (2741) tightens a connection between a hydraulic actuator and steel reaction mass used to do the shaking. The "tires" in the background are air bags holding up the 11-ton reaction mass. The bottom of the hydraulic actuator is bolted to the bridge, and the rod pushes repeatedly against the steel mass to produce the force for shaking the bridge. Test data relating the forces exerted by the Sandia shaker apparatus to deflection of the bridge has been compiled by Los Alamos National Lab for a New Mexico State study of damage detection in bridges. (Photo by Randy Montoya)

Reduced Re-education Time Targeted

Intelligent Systems and Robotics Center Working to Retrain Defense Engineers

Sandia's intelligent systems and robotics managers have taken a cue from the old adage: If life hands you lemons, make lemonade. So, as some of Sandia's more traditional research activities are trending downward, the robotics groups are trying to attract "surplus" engineers to their growing field.

A primary method, says Jerry Stauffer of Intelligent Systems and Robotics Center (IS&RC) Program Office 2102, is recruitment into the "Compete" project, a course designed to retrain those whose current work is dwindling, for new roles in robotics. "Compete" is funded through the Defense Programs Sector R&D Coordination Center.

"FY93 was our start-up year, and we've taught 17 of these classes, some as brief as a half-day and others as lengthy as a week," he says. "We farmed some of the classes out, but our own engineers taught nine classes on robotics software development."

In the past, it has taken 12-18 months to train someone transferring into the IS&RC organization to the level at which they can contribute broadly to the program. The goal with Compete is to reduce that time to six months, says Jerry.

System Still Needs Fine-Tuning

During the first year, more than two dozen former Defense Program staff members participated in some or all of the classes, whose subject matter included real-time operating systems, fuzzy logic, advanced robotics controls, and IS&RC software products and practices.

Jerry says response from participants ranges from "too slow" to "about right" to "I'm totally lost," indicating that the system still needs some fine tuning.

"We wanted to start with retraining Sandians, but after the program was up and running, we decided to explore the possibilities of formalizing and expanding it to a much wider base," he says. "To help us with that, we've asked Education and Training to collaborate with us to develop the curriculum, and we've asked the University of New Mexico to research the need for robotics classes across the country for us."

However, Jerry says, the IS&RC is not an education and training organization and doesn't want to continue teaching courses. Rather, the organization wants to develop the prototype so it is specific

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A Lesson from Rudolph

Sandia, DOE Plans Will Capitalize On Local Input

If you want to understand the power of diversity, one Sandian pointed out recently, just tune in to the TV programs that show up this time of year and watch for a certain red-nosed reindeer.

The other reindeer found Rudolph a bit peculiar. They made fun of him because he was different from what the dominant reindeer culture thought proper.

But then came the night when his peculiar characteristic was the one thing that could get a fogbound sleigh out of trouble.

That idea — that people's differences are a strength, not a hindrance — underlies diversity programs at Sandia and elsewhere. What's new in the

Rudolph's peculiar characteristic was the one thing that could get the fogbound sleigh out of trouble.

Labs' approach, says Executive VP Jim Tegnelia, is that Sandia is expanding the standard idea to include not just employees but the surrounding community as well.

A first step in that direction happened last month when the Labs hosted an Executive Forum on Diversity and invited about 30 community leaders from Albuquerque and surrounding areas — people in business, government, and education — to tell Sandia and the Department of Energy how the Labs could become a better corporate neighbor.

"We originally expected to have our executive management at the forum, plus some managers from Martin Marietta and DOE," explains Mike Robles, Director of Diversity Leadership Center 3600. "When Jim Tegnelia reviewed the plans, he said the agenda was fine but urged that the community be involved. So we invited representatives

(Continued on Page Four)

This & That

It'll Be a World-Class Scream – It's great to have ambition and lofty goals, but I may not be able to stifle a scream if I read or hear that another group *plans* to become a "world-class" organization and a "source of competitive advantage" for the Labs. Seems to me you should do those things first, then brag about them. If you really *achieve* such high goals, you won't even need to brag about your group; others will do your bragging for you.

* * *

Your "Souvenir Dollars" at Work – Thanks to all Sandians who bought Sandia logo items – mugs, caps, T-shirts, knives – this year. Every penny of "profit" from the sale of these items goes to charitable causes. About $2,000 will be distributed in the next few days directly to needy families in several rural New Mexico villages to help make their holiday season brighter. Another $1,800 or so was distributed earlier this year to regional, national, and international charities, including the Albuquerque Rescue Mission, Salvation Army, the Marines' Toys for Tots program, CARE, and others. Retired LAB NEWS Editor John Shunny runs the souvenir program with the help of several Sandians. The items are available at the LAB NEWS office in Mobile Office 172, at the Solar Tower, and at the Sandia/California Public Relations offices, Bldg. 911, Room 133.

* * *

Oh, No! A "Stakeholder" Office – One national lab has established a "Stakeholder Involvement Office," thereby institutionalizing the awful "S" word, as it's known around my office. If anyone at Sandia officially names anything the "Stakeholder" something, there's a good chance your name will show up in this column, and I promise to nominate you for induction into the Bureaucratic Hall of Shame.

* * *

Can My Fax Call Your Fax? – No doubt about it. Fax machines save us all lots of time and steps, but there's a problem: The LAB NEWS ads, *Weekly Bulletin* announcements, and other info faxed to us in Employee Communications can total several hundred in a typical week, and about half the folks who send faxes call soon after to ask if we got them. After answering the nineteenth such call of the day, even people as nice as we are can get a little testy – especially on deadline days. What we need is an automated program that commands our fax machine to call the sender with a message that we received his or her fax. Maybe something like that already exists. Anyone?

* * *

Popping Off – Spouses sure can be cruel at times. One of my buddies says he was just about to sit down in front of the TV last weekend to enjoy a big football game when his wife insulted him. He was opening a freshly popped bag of a new type of microwave popcorn when his wife told him he really had no right to eat it. "What do you mean," he said. "I really like this new 'Butter Lovers' variety." "Oh, sorry," she said, "I thought it said 'Better Lovers.' " Remember, this happened to a buddy of mine – not to me. Nosiree, definitely not to me!

* * *

See You Jan. 7 – This is the final 1993 LAB NEWS. We publish next on Friday, Jan. 7. Have a safe and joyful holiday break. •LP

Creates New Classes of Positions

Guards Union Ratifies Contract

Members of the International Guards Union of America (IGUA) on Nov. 30 ratified a new three-year contract with Sandia.

"We are pleased that the Sandia employees represented by the IGUA have voted to accept this contract," says Julian Sanchez, Manager of Labor Relations Dept. 3510 and the Labs' bargaining agent. "It offers wages and benefits competitive with those in comparable private industry and other DOE facilities."

The new contract calls for increases in both base pay and non-base pay over the life of the contract, although there will be no base-pay increases in the first year. The contract calls for increases in shift premiums and pension benefits and adds a meal allowance provision.

The contract creates two new classes of positions. One of these is called Security Police Officer 1. Employees in this class will carry firearms, but performance requirements are less stringent than for Security Police Officer 2. The pay rate is 10 percent less than for Security Police Officer 2. According to Julian, there are no employees currently in this classification and probably will be none during the three-year course of the new contract.

Employees in the other new position, called Security Officer, will not carry firearms. The pay rate is 15 percent less than that of Security Police Officer 2. During the course of the three-year contract, says Julian, employees entering these positions are expected to be either new hires or current employees who volunteer for the unarmed classification.

Sandia will continue to pay all of an employee's health care premiums, but employees will make contributions for dependent coverage beginning Jan. 1, 1995, as is the case with all other employees, represented or not. The contract calls for increases in benefits in dental and vision coverage as well as increased coverage of certain preventive cancer screenings.

Vacation provisions will remain the same as under previous contracts for current employees but will be reduced for employees hired after Dec. 1, 1993. This provision also is consistent with vacation benefits for all Sandia employees.

The IGUA is the bargaining unit for about 140 employees at Sandia/New Mexico. •

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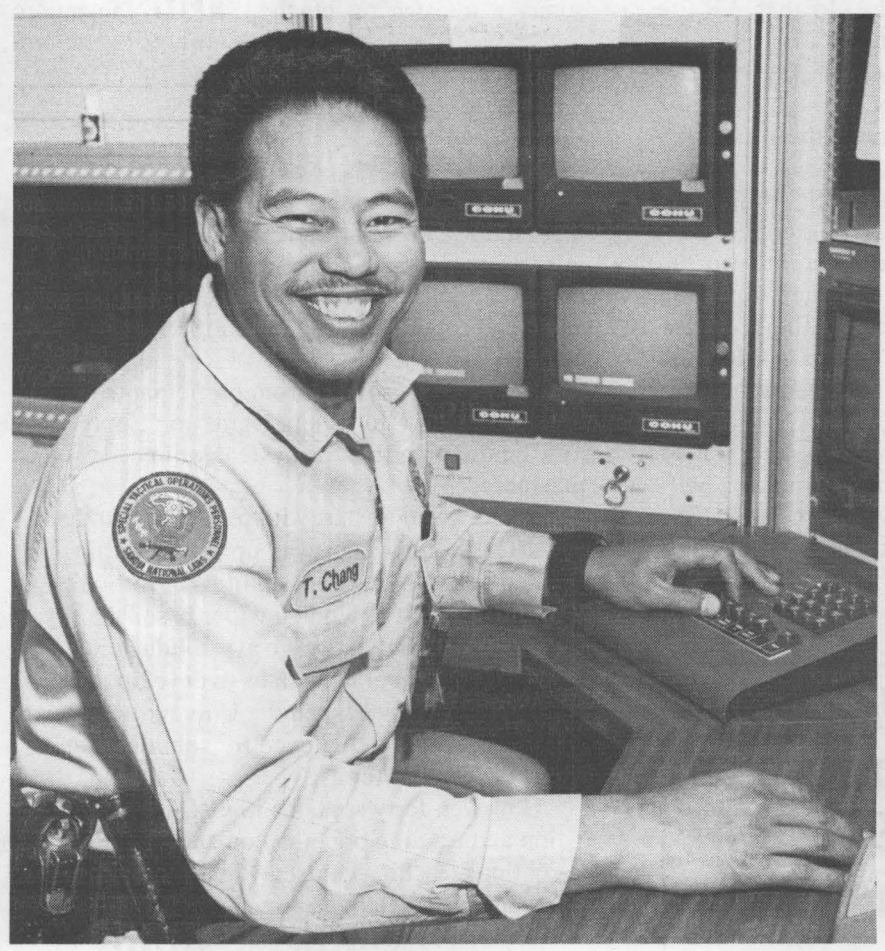


TERRY CHANG (7435) has won the third annual Security Police Officer of the Year award. He was selected by a committee from among eight finalists, based on job performance, knowledge, appearance, demeanor on the job, and other facets of his work. Dave Stout (7432) says North Force and South Force officers of the quarter are selected each quarter, and that group makes up the pool of finalists for the annual award. Terry, who has been at Sandia for more than nine years, received an Individual Performance Award, a uniform-type jacket identifying him as the Officer of the Year, and a shooting jacket, and his name will be placed on a permanent plaque.

'Cloudy' Project to Answer Murky Questions

'Nobody' Will Fly New Climate-Research Aircraft

Do clouds hold the key to global warming?

With help from a high-flying unmanned aerospace vehicle — a UAV — carrying sophisticated instrumentation, a multi-agency team of researchers is investigating the role clouds play in moderating and distributing the sun's energy throughout Earth's atmosphere. The answers they find, scientists say, may help unlock Mother Nature's secrets behind global climate changes.

"The atmospheric radiation measurement [ARM]–UAV program focuses on one of the most significant areas of uncertainty in understanding global climate change: the interaction of the sun's radiant energy with Earth's atmosphere and with clouds," says Will Bolton (8102), deputy technical director for the ARM-UAV program.

"As the sun's energy enters the atmosphere," he continues, "it is absorbed or reflected. Improving our knowledge of this phenomenon is crucial to understanding large-scale problems, such as global warming. The UAV platform allows us to fly solar radiometers and other instruments into the atmosphere above and below the clouds to better understand what happens to the radiant energy."

Managed by DOE and funded through the Defense Department's Strategic Environmental Research and Development Program, the ARM-UAV project will advance climate research by taking advantage of the unmanned aircraft's high-altitude, long-endurance capabilities.

Sandia is part of a program that may help substantiate or disprove current theories about global climate trends.

Sandia is the technical director and overall integrator for the multi-lab program. Other major participants include NASA Ames Research Center, Los Alamos National Lab, Lawrence Livermore National Lab, University of Wisconsin, Harvard University, Colorado State University, Pacific Northwest Laboratory, and Brookhaven National Laboratory.

'Gnat' Made First Flight

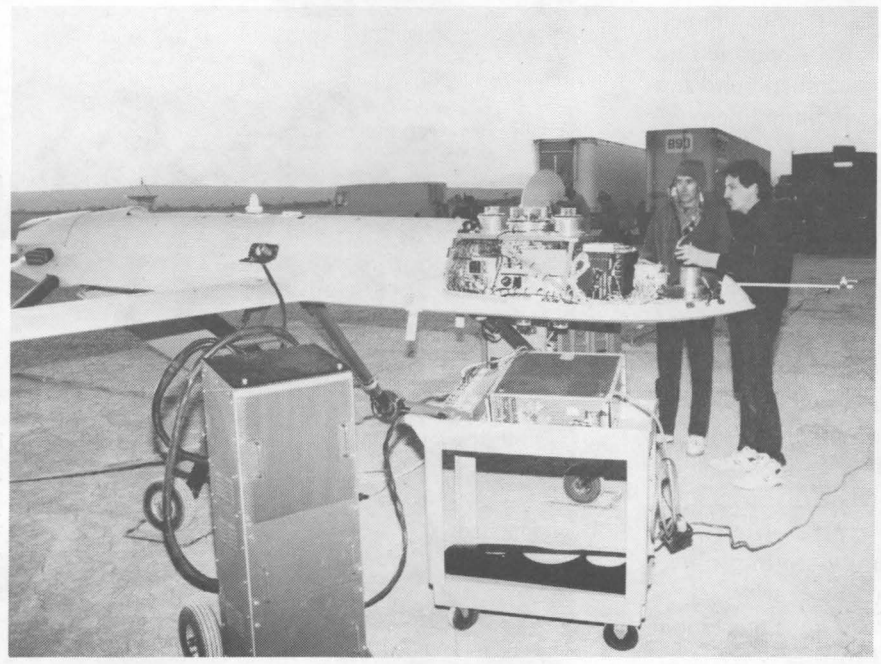
To kick off the project's demonstration phase, the team instrumented an "off-the-shelf" craft, a General Atomics "Gnat," for the first-ever climate-related measurements made with a UAV. The Gnat made a successful 2½-hour engineering test flight near California's Edwards Air Force Base on Nov. 13.

The remotely controlled UAV used radiometric instruments provided by NASA to measure radiant energy flux at several altitudes, reaching a maximum height of 22,700 feet. The payload also included a commercial meteorological package to measure temperature, pressure, and water vapor concentration throughout the bow-tie shaped flight pattern at three different altitudes.

"The first flight served as an engineering test to demonstrate the utility of a UAV platform for climate research, and to make sure our instruments worked correctly," Will explains. "The bonus was that we collected valuable scientific data and made important measurements of radiant energy."

A second demonstration, scheduled for early 1994 at DOE's north-central Oklahoma Cloud and Radiation Testbed (CART) site, will expand the research effort by making measurements in conjunction with ground-based instruments at CART. Over the next two years, research will incorporate more-sophisticated instruments and more-capable UAVs. In the final phase, advanced UAVs such as the Aurora Perseus aircraft will eventually carry instrument payloads to the top of the troposphere, approximately 20 kilometers above Earth's surface.

"The interim-phase flights will last up to 24 hours," says Will, "and the full-capability UAV with flight endurance up to 48 hours can provide nearly continuous coverage of an area anywhere in the world for extended periods."



ALL SYSTEMS GO — Will Bolton (8102, left) and Ron Renzi (8111) examine atmospheric-radiation measurement instruments on a General Atomics "Gnat." This remotely controlled craft last month carried instruments to study what happens to the sun's radiant energy when it enters Earth's atmosphere. Later, aircraft will be used that can stay aloft taking measurements for as long as 48 hours.

Will continues, "DOE has identified three primary major CART sites with highly variable weather patterns — the Southern Great Plains region in Oklahoma, the tropical western Pacific, and Alaska's North Slope — where it will place surface-based instruments. With the ARM-UAV, we can make airborne measurements not possible from the ground, as well as help calibrate and validate surface- and space-based measurements."

Looking at Global Climate

According to Will, the ARM-UAV program may help scientists substantiate or disprove current theories aimed at explaining major global climate trends. For example, the "thermostat hypothesis" contends that when the sun's energy hits the ocean surface in the tropical western Pacific northeast of Australia — part of the "heat engine" that drives the global climate — it warms the large pool of water to a certain temperature, then stops, even though additional energy is available. This feedback mechanism helps regulate the temperature and moderate the effect of global warming.

The reason is still unclear and controversial. Some researchers believe that when the ocean temperature hits a certain limit, the convection process conveys more water vapor high into the sky. That forms a large blanket of cirrus clouds that shade the surface by reflecting away energy, which limits the temperature rise. Other researchers believe that evaporation plays the major role in cooling the ocean surface and limiting the temperature rise. By measuring the effects of clouds and water vapor, ARM-UAV will contribute to the understanding of such key phenomena.

Information collected by the ARM-UAV program will also help improve global climate models used by the federal government to create environmental policy. "Government decisions to reduce emissions of carbon dioxide and other greenhouse gases can have a tremendous economic impact by affecting power production, transportation, and other key industries," Will explains. "If we can better understand the cloud feedback mechanisms that influence the degree to which these gases affect global temperature, the government can make more-informed policy decisions.

"Interim-phase flights will last up to 24 hours, and the full-capability [aircraft will fly] up to 48 hours."

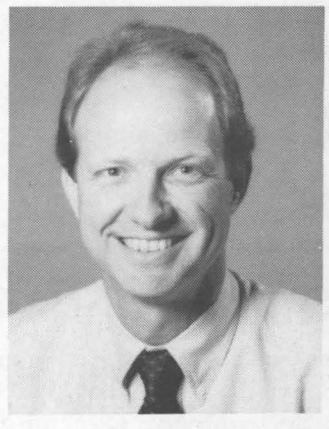
"The program also enables climate modelers to ask important questions, such as 'If we limit carbon dioxide or aerosols to a specific level, how does it affect the formation of clouds, and what is the long-term influence on global climate?' " he continues. "By helping scientists explore different scenarios and improve their models, the ARM-UAV program will provide valuable data that can be translated into real-world applications." •

SANDIA CALIFORNIA NEWS

Supervisory Appointment

MIKE DYER to Director of the newly created Center for California Technology Transfer 8800.

Mike joined Sandia in 1975 as a Member of Technical Staff in the Combustion Applications Division. In 1981 he was named supervisor of that division and guided it in the application of laser diagnostics to engine combustion research. This division was instrumental in establishing technical ties with nearly every major engine manufacturer in the world. In 1989 he became the first manager of the new California Technology Transfer and Industrial Relations Office and for six months this year served as acting Director of the Technology Transfer Center in Albuquerque.



MIKE DYER

Mike has authored some 20 publications and reports in internal combustion engine processes and was the first recipient of Sandia's E. Karl Bastress Award in 1990 for his contributions to the coupling of combustion research programs to needs of US industry. He received the DOE Distinguished Associate Award in 1990 for contributions to the DOE combustion technology program.

He has a BAE in aerospace engineering from the Georgia Institute of Technology and a PhD in aerospace and mechanical sciences from Princeton. Before coming to Sandia he was a laser research engineer at the US Air Force Weapons Laboratory at Kirtland AFB in Albuquerque. •

(Continued from Page One)

Local Input

from groups such as the All Indian Pueblo Council, the Chamber of Commerce, the Albuquerque Economic Forum, city and state government, and several businesses. In addition, we included Sandia's unions and outreach committees."

Among the representatives from DOE headquarters was Corlis Moody, Director of the Office of Economic Impact and Diversity. (See the interview with her below.)

Planning to Plan

The forum was really an occasion for "planning to plan," says Mike. Participants proposed specific action items, several of which are already being worked on, but there will be further planning to set dates and determine what resources are needed. The plan needs to look five or ten years into the future, says Mike, while it defines objectives that can be measured perhaps yearly.

"The forum actually exceeded my expectations in proposing action items and further activities," says Jim. "But of course it's one thing to have a meeting on diversity, and it's another to make diversity work inside the Labs and in the community as a whole. What we want to come out of this process is a program of action that will make diversity truly a part of the Labs and make the Labs better recognized as a part of the community."

"TREAT ME as though I'm angry," reads the card in front of VP-6000 Dan Hartley (third from left among the people seated around the table), though Dan doesn't seem to be acting the part. During November's Executive Forum on Diversity, participants experienced how it felt when people constantly ignored them, argued with them, or otherwise treated them differently than others. Seated at the table with Dan are (clockwise from left) Paul Brewer (8500), Executive VP Jim Tegnelia, VP-3000 Charlie Emery, Ken Nuñez (5362), and Corlis Moody (Director of DOE's Office of Economic Impact and Diversity). Observing from the background are (from left) Wade Ishimoto (7302), Jerry Langheim (seated, 12600), Dean Pershall (standing, 9216), Warren Siemens (4200), and Mim John (8100).

How Others See Sandia

The forum wasn't so much an occasion to talk to community representatives as to listen to them, says Jim. "We asked them to comment about Sandia's interactions with the community, particularly in diversity-related activities. Are we helping small businesses? Are we helping woman- and minority-owned businesses? Do we have a good educational program that helps minorities? We learned that apparently we haven't communicated with our community as effectively as we thought. Our understanding of our participation in the community was different from what we heard in this forum. Before we can work on problems together, we have to have a common understanding of what the problem is — and we're just starting to develop that common understanding."

Among the points made by the community representatives, says Jim, are the perception that a "good old boy" network makes it hard for new companies to get contracts with the Labs, that Sandia's business practices make it hard to perform contracts once they're awarded, and that there's little minority participation in technology transfer.

"Even though a lot of Sandians are involved in the community," adds Mike, "the image is that we're not really involved. Maybe we've taken too much of a shotgun approach and haven't focused on specific areas where we could make a difference." Some of those community-related areas, he says, are in the Labs' purchasing activities, technology transfer, and community outreach activities such as education and volunteer programs.

"The community seems very happy with our educational outreach," says Jim, "so maybe that's a model for how we can do some other things."

In the more traditional diversity area that focuses on the internal work force, Sandia seems to be doing a good job in offering promotion opportunities, says Jim. "But we have a problem with getting entry-level jobs filled adequately by minorities and women. That's where we need to build a base of new young people to create diversity in the upper levels of the Labs later on." Sandia needs to make sure its hiring brings in a diverse mix of people, says Jim, an undertaking that may benefit from working more closely with universities.

Doing Away with the 'Caste System'

Another internal area for improvement, says Mike, is in what's often referred to as a "caste system" at the Labs. "Our culture — 44 years in the making — says that Members of Technical Staff occupy one sphere, Members of Lab Staff another, technicians another, union-represented employees yet another, and so on," says Mike. "When we form teams or committees, we often

(Continued on Next Page)

Labs' Forum 'An Excellent Beginning,' Says DOE Diversity Director

A few days after the Labs' Executive Forum on Diversity last month, the LAB NEWS spoke by telephone with Corlis Moody, Director of DOE's Office of Economic Impact and Diversity, which comprises the offices of Small and Disadvantaged Business Utilization, Civil Rights, and Minority Economic Impact. She attended the forum, and here's what she said about it and related matters:

LN: Was Secretary of Energy Hazel O'Leary particularly interested in a diversity program being associated with the contract for Martin Marietta Corporation to manage Sandia?

Moody: The Secretary knew that Martin Marietta had a good reputation in diversity, but of course, as with all things, would like to see it better. The interest is not specifically Sandia or Albuquerque or Martin Marietta. It's a DOE effort, and we'll be doing it all across the country, throughout the complex. Because Martin Marietta just won the contract, it's perfect timing for all of us to get together.

LN: After participating in the forum, what do you see as Sandia's biggest problems or challenges?

Moody: Challenges and opportunities start merging when you talk about diversity. We went not knowing where to begin, I think. Sandia did a fabulous job in two days of effort, with people from all three groups [Sandia, Martin Marietta, and DOE] devising the skeleton of a very good diversity plan. The challenges, I think, are the community efforts, changing the opinion of Sandia in the Albuquerque community — especially in the small and minority business community. I can't really say what we will have in the end, but I think we have an excellent beginning.

LN: What can you say about Sandia's efforts in diversity, compared to others'?

Moody: I'm not certain that you are any different from anywhere else, except that you have started the initiative to change. Starting out with this kind of effort puts you ahead of the game. Most folks have not risked having community representatives play a role in deciding their future. Sandia and DOE and Martin Marietta should be applauded for that. We didn't have to do it that way. We could have sat around with just the principal officers and made decisions. This involved every level of employee and the community. I think that's as good as it possibly can get.

LN: Will the forum affect how you'll work elsewhere in DOE? Did you get any new ideas?

Moody: One of the most exciting pieces of our two days was when they broke us into small groups of four or five and sent us into separate rooms to draw pictures of what we thought diversity was. We all came out with basically the same picture. The pictures looked different, but the components were all the same. So we know that it worked for that control group. Now what we have to do is produce a product that will work across the complex.

Another good thing, I thought, was showing us how diversity works in meetings. They put four or five of us around the table, with placards saying do this to me or do that to me. I think mine said "Argue with me." You didn't know what your sign said, but people treated you differently. And then we talked about how that felt, and the observers talked about how we acted in the situation to put us in a real-life situation dealing with diversity.

LN: What's next?

Moody: I'm coming back for another meeting. That's when we're going to put time lines and accountabilities on the things that we came up with. I applaud the whole effort. I think it's absolutely excellent.

(Continued from Page One)

Labs' FY94 Budget

balance from FY93 and is serving DoD customers whose program budgets are steady or growing. "Our new initiatives (manufacturing, biomedical engineering, transportation, and RSTAKA — Reconnaissance, Surveillance, Target Acquisition, Kill, Assessment) are also beginning to provide some new sources of funds," says Sam.

Labs Will Hire in FY94

"Sandia management kept a lid on employment and didn't allow the Labs to grow a lot during the relatively flush '80s and early '90s," says Paul Stanford, Chief Financial Officer and VP-10000. "We've had plenty of work during this time, and we could have 'grown' the Labs more than we actually did. Instead of hiring more people, we contracted out some of our work and worked substantial overtime. That means we don't have extra employees now that the growth days are over."

Sandia now has about 8,530 employees, compared with 8,422 about nine years ago in FY85.

"Sandia will continue to have a hiring program in FY94," says Ralph Bonner, Director of Human Resources Center 3500. "Although things could get tighter in future years, Sandia will continue to have modest to normal hiring, and the hiring program will be monitored closely."

The budget below does not show amounts for indirect services such as security, communications, legal, etc. These services are paid for out of the amounts shown in the chart for the technical programs. The operating budget also does not include major construction projects, capital equipment purchases, or general plant projects. The FY94 budget for these items is about $134 million.

Dick Shepardson cautions that spending plans can change during the fiscal year and the Department of Energy and other Sandia customers can sometimes require that plans be put on hold or changed. In other words, he says, the Sandia budget should be considered as a spending projection for the year; the projected amounts never quite match the amounts that are actually spent — or "costed," as Labs "budgeteers" often say. For example, Dick says, the Labs actually spent just over $1.28 billion last year, less than the $1.31 billion that was funded. Remaining funds were carried over into FY94 to provide continuity of operation and a steady budget. •LP

Sandia National Laboratories
Funding by Sectors
FY93 Actual and FY94 Estimated
(Dollars in Millions)

DEFENSE PROGRAMS (DP) SECTOR	FY93	FY94
DOE Weapons Programs		
Research and Development	$363.5	$295.5
Testing	39.6	36.5
Technology Transfer Initiative	30.9	76.8
Inertial Confinement Fusion	29.7	28.2
Stockpile Support Weapons (SS)	141.8	149.0
Program Direction	9.0	6.1
Weapon Complex Reconfiguration	0.0	18.6
Subtotal Weapons Programs	614.5	610.7
Other DOE and Reimbursable Programs		
Verification & Control Technology	60.0	91.3
Nuclear Safeguards and Security	9.2	9.1
DOE Intelligence	3.3	3.4
Other	2.0	0.0
Reimbursable Intelligence	21.5	26.2
Reimbursable CRADAs	4.2	7.8
Reimbursable SS	18.0	22.0
Total DP Sector	732.7	770.5
ENERGY & ENVIRONMENT (E&E) SECTOR		
Energy Research	37.0	46.9
Applied Energy	66.7	77.0
Nuclear Energy Technology	25.5	29.4
Nuclear Waste Management	55.5	65.2
Environment	84.3	98.0
Total E&E Sector	269.0	316.5
WORK FOR OTHERS (WFO) SECTOR		
Reimbursable Work for Other Federal Agencies	268.1	302.7
Reimbursable Non-Federal Entity	4.8	5.4
Reimbursable Work for Integrated Contractors	6.1	6.9
Total WFO Sector	279.0	315.0
TOTAL	**$1,280.7**	**$1,402.0**

Sandia Expenditures Contribute Millions To Local, State Economies

Sandia contributed more than $850 million to the New Mexico economy in fiscal year 1993 in wages paid to employees, commercial purchases from New Mexico vendors, and gross receipts taxes paid to the state. Wages and purchases in California topped $174 million.

In the 12-month period ended Sept. 30, Sandia's total payroll was $455.9 million, including $393.3 million paid to employees in New Mexico. Another $58.8 million was paid to Sandia/California employees. The FY93 payroll for employees at Sandia's Nevada operations was $3.8 million. The New Mexico figure includes salaries paid to a few employees located in other states.

Gross receipts taxes paid by Sandia to the State of New Mexico in FY93 amounted to $51.7 million.

In that same period, Sandia purchased goods and services worth $405.8 million from commercial vendors in New Mexico and $117.6 million from vendors in California. Total Sandia commercial purchases in FY93 amounted to $768.6 million.

Fifty-nine percent of the total commercial purchases, or $426.8 million, were made from small businesses. Purchases from vendors classified as small, disadvantaged businesses amounted to 10.9 percent, or $78.5 million. Small women-owned businesses were recipients of 8.1 percent, or $57.9 million, of the Sandia FY93 purchasing dollars.

(Continued from Preceding Page)

don't have a good melding of people from these various positions, even when we have a mix of gender and race."

To make sure that progress continues on immediate actions agreed to at the forum, "owners" accepted responsibility for four areas: Mike, along with Charlie Emery, VP for Human Resources 3000, for internal work force issues; Jerry Langheim, Director of Public Relations and Communications 12600, for community programs; Donna Martin, Director of Procurement 10200, for purchasing; and Warren Siemens, Director of Technology Transfer and Commercialization 4200, for technology transfer. Mike has the job of making sure the four areas are smoothly integrated.

"We wanted to make sure we didn't go away saying, 'This is all wonderful, but how are we going to do it?' " says Mike. "It's not going to be free. Everybody at the meeting agreed that we'll need to redirect some of our current resources and integrate them better."

Jim says, "What we call 'managing diversity' is a simple idea, but it's a lot easier to describe than to do. It consists of getting all of the diverse elements of our organization into play and helping meet our business objectives. And it means reflecting the character of the community we live in and being a good neighbor with that community."

One crucial aspect of a successful diversity effort at Sandia will be its diffusion throughout the Labs, says Mike. Diversity has to be integrated into business processes, and it has to have participation by line organizations, not just a specially designated diversity organization. "The Corporate Diversity Team is a good example," says Mike. "It's led by a line director, Bob Eagan [Director of Engineering Materials and Processes 1700], and the people on the team are all volunteers from across the Labs" (LAB NEWS, June 25).

Diversity should mean a healthier company — that's one of the fundamental assumptions of diversity activities in US corporations. In examining this assumption and how it applies to Sandia, says Mike, the Corporate Diversity Team has begun looking at other companies' experience, at the Labs' internal data, at the record of diverse teams vs. homogeneous teams, and other indicators of what diversity can mean to the health of a business.

In any case, concludes Mike, Sandia is in a distance run, not a sprint. "We don't want to set up expectations that can't be met in the short term. Yet our current culture prides itself on getting things done quickly. We have to accept that in this area we'll make progress gradually. Yes, we'll make a series of commitments, and we'll be measured year by year, but we're aiming at a goal that's as much as a decade away. It's certainly not a one-time quick fix."

Maybe the job never ends, suggests Jim. "Diversity — managing it, taking advantage of it — is what we have to do to be successful in our environment for perpetuity." •CS

Retiree Deaths

Robert Carleton (71)	3425	Nov 12
Leoma McMillan (80)	3147	Nov 14
James Walker (68)	7812	Nov 14
Leon Davis (89)	3521	Nov 21
Wayne Townes (57)	8513	Nov 22
Herschell Young (83)	7411	Nov 28
Jesse Watts (75)	8262	Nov 30

Sympathy

To Lee Owen (10329) on the death of his mother in Albuquerque, Nov. 5.

To Richard Wahlberg (9613) on the death of his son, Glenn Wahlberg, in Albuquerque, Nov. 18.

To Lori Parrott (12610) on the death of her father, Charles Parrott, in Rapid City, S.D., Nov. 25.

'Loaner' Sandian Spends Four Years in Washington

Gil Weigand Helps Put Defense Department on Five-year Path to 'Pre-eminence' in High-Performance Computing

After a four-year assignment in Washington, Gil Weigand (12120) says having his fingerprint on national policy recommendations allowed him to come away with a fresh, national perspective extending beyond the boundaries of the DOE labs.

From October 1989 to September 1993, Gil was on loan from Sandia to the Advanced Research Projects Agency (ARPA, formerly the Defense Advanced Research Projects Agency), where his main job was to serve as a program manager for information technology and high-performance computing projects.

Before his return to Sandia in October, however, he had helped the nation's policy-makers set national directions for information technology and garnered an unexpected honor — the Secretary of Defense Medal for Outstanding Public Service.

The award— presented to him in May by Anita Jones, Director of Defense Research and Engineering — recognizes Gil's leadership role in initiating the Department of Defense's High Performance Computing Modernization Program. It also recognizes his managing role in more than 50 information technology, high-performance computing, and information infrastructure projects for ARPA.

GIL WEIGAND (12120) recently spent four years in Washington as a "loaner" Sandian to DoD's Advanced Research Projects Agency. During his assignment, he helped determine future directions for DoD's high-performance computing capabilities. He also had occasion to meet with Vice President Al Gore as a member of Gore's National Performance Review team, popularly known as the "Reinventing Government" initiative.

The Complexity of Modern Warfare

These days, he says, the military needs affordable high-performance computing and networking capabilities to solve the complex problems of modern, high-tech warfare. "Building and deploying today's defense technologies, such as precision strike weapons and advanced aircraft, requires real-time information systems and increasingly higher-performance computing capabilities," he says.

One of Gil's first assignments was overseeing the Intel Touchstone project, a joint ARPA/Intel task to develop one of the world's fastest computers — a parallel computer employing thousands of microprocessors. The project resulted in the commercialization of technology that became the basis for a variety of military and commercial systems, including the Intel Paragon supercomputer recently installed at Sandia.

He also initiated a unique joint project between Intel and Honeywell to show that small, lightweight, high-performance computers for use in weapons, typically referred to as "embedded" systems, could be scaled-down from commercially available high-performance computing technologies such as the Touchstone.

In recent years, he explains, the military's embedded computing capability has advanced at a slower rate than have commercially available capabilities. By adapting "off the shelf" high-performance hardware and software to military needs, the military can stay caught up with computing trends and capabilities at a much lower cost. Gil points out that many of the technologies developed under ARPA serve dual roles in both the military and private sectors.

Also during his assignment, Vic Reis, former Director of Defense Research and Engineering, asked Gil to chair the Task Force on High-Performance Computing Modernization, a high-level DoD initiative to plan a road map for future high-performance computing directions. (Reis is now Assistant Secretary of Energy for Defense Programs.)

The task force played a major role in getting the Army, Navy, and Air Force to agree and collaborate on a high-performance computing strategy that meets their foreseeable computing needs, and also aligns them with computing capabilities at the DoD research and engineering labs. The aggressive nine-month effort resulted in a $1.6 billion addition to the President's FY93 budget request, earmarked for DoD computing and networking modernization during the next five years.

"We put DoD on a path for achieving a pre-eminent computing systems capability within five years," says Gil. "It was an enormous job. I found out that if you correctly learn the ropes, navigate the hallways, and work with people in Washington, you can accomplish a lot."

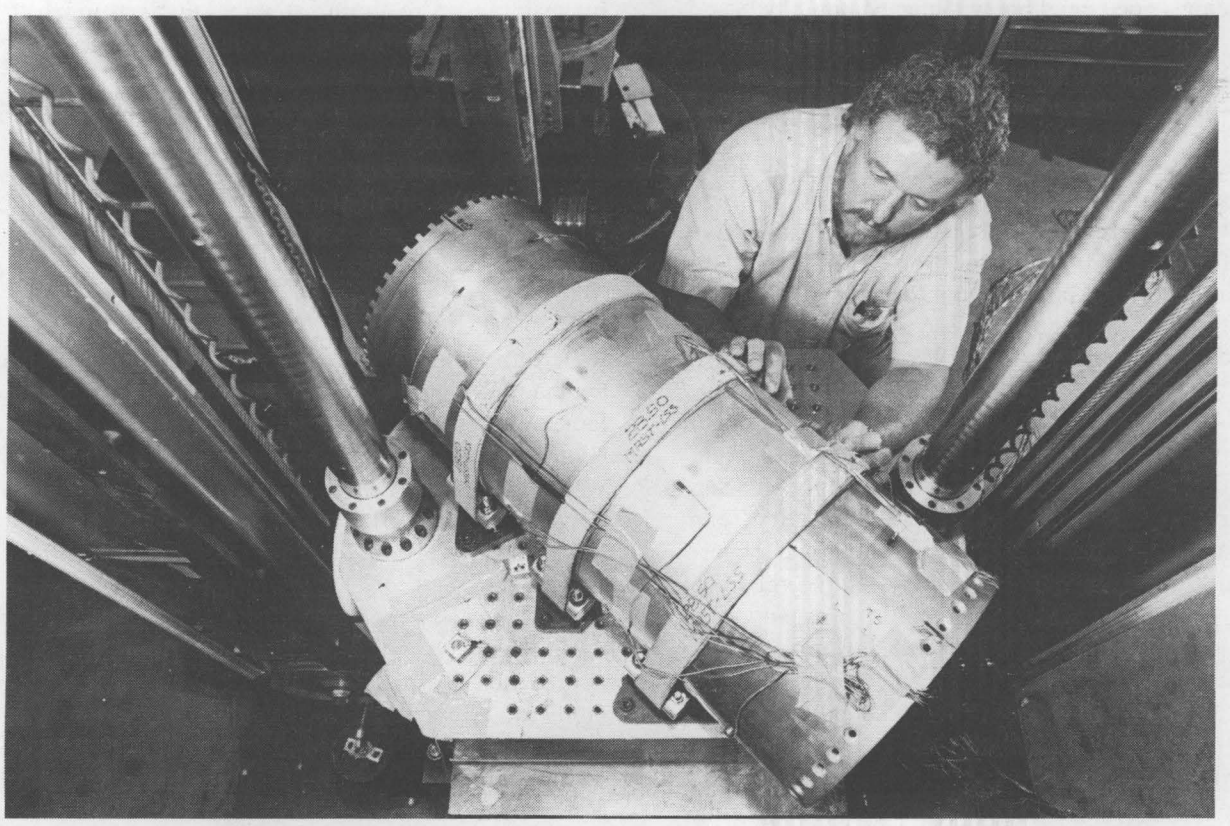
Helping Reinvent Government

Just as Gil was about to return to Sandia, he received perhaps his most exciting assignment — a chance to take part in Vice President Al Gore's National Performance Review (NPR), popularly known as the "Reinventing Government" initiative, that recommended to President Clinton sweeping changes in federal policy and bureaucracy.

As a member of the NPR Information Technology team, Gil helped draft the portions of the final report — titled "Creating a Government that Works Better and Costs Less" — having to do with computer security and privacy, constructing and maintaining a national information infrastructure, and sharing information among government agencies.

He says his assignment in Washington not only broadened his perspective on technology to a national scale, but also allowed him to cast a positive light on Sandia and its work for those who set national priorities. He believes Washington assignments for Sandians are remarkably successful. "Because of the many hard-working Sandians who go to Washington, a lot of senior government folks get to know us and typically have a good feeling about Sandia that they may not have had before."

Currently Gil is helping the Labs' new Chief Information Officer, Arlyn Blackwell (12200), explore ways to expand information systems capabilities within Sandia. He says he hopes to help chart and implement a course for Sandia to follow that will both give every Sandian immediate desktop access to Labs information and allow Sandia to "achieve a leadership capability in information technologies and systems in the national interest." •JG



FRED BROWN of Mechanical and Climatic Testing Dept. 2742 prepares a warhead model for testing on a shock table. The test, designed to provide data on shock-mitigating techniques used in the electrical system, measures the structural response to shocks inflicted during laydown delivery. (Photo by Randy Montoya)

Winter Weather Work Delay? Here's How to Find Out

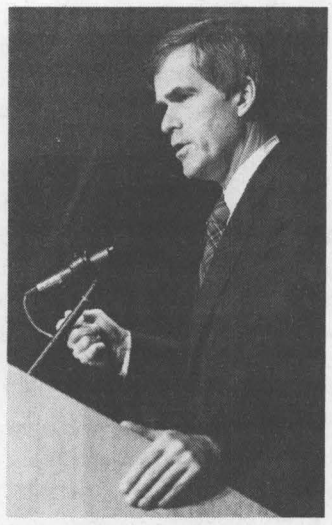
New Mexico Sandians are reminded that the Labs seldom shuts down or alters its work schedule because of snow or other bad weather. Employees should not assume that Sandia work hours have been altered just because they hear other groups have done so, including Kirtland Air Force Base.

If Sandia officials decide to alter normal beginning work hours, a Labs spokesperson will notify primary Albuquerque radio and television stations as early as possible. Employees may also dial Sandia Line on 845-6789, punch 9 for the quick dial code, then punch 9999#. If work hours are altered, there will be a message to that effect.

Small Science Over Big Science

Bingaman Advises Labs to Stay Attuned to Industry Needs

The national laboratories today find themselves at the axis of a fundamental shift in the way the federal government involves itself in science and technology, said US Sen. Jeff Bingaman during a Dec. 2 talk to nearly 500 Sandians at the Technology Transfer Center.



SENATOR Jeff Bingaman speaks to Sandians in the Tech Transfer Center Dec. 2.

That shift stems from shrinking budgets for military-related R&D on the one hand, and the need for a stronger, more competitive US private sector on the other. As a result, the nation's leaders are experimenting with ways to redirect the nation's historical focus on defense development toward commercial R&D that will nurture a better US economy.

During the next several years, he said, Sandians will witness a transition from "R&D for knowledge's sake" to "R&D for job creation and the economy." He also predicts a healthy emphasis on R&D that supports small- and medium-sized businesses, not just large, multinational corporations.

Science increasingly will be conducted under a "spin-on" model rather than a "spin-off" model, he said. Instead of the private sector benefiting primarily from the commercialization of military technologies, the military will begin benefiting from more technologies developed in the private sector. Development of dual-use technologies — those that have both commercial and military applications — will be increasingly important.

In addition, "small science" aimed at the practical needs of US industry will likely triumph over "big science" — costly, long-term scientific projects such as the recently canceled Superconducting Supercollider program.

"As a nation, we are in the midst of trying to form a consensus about what directions we ought to go," he said. "In practice, the impact of these changes will perhaps be played out more significantly in our DOE labs than anywhere else in our federal research and development institutions."

Divergent Views in Washington

The debate has attracted some widely divergent views in Washington about the appropriate future role of the national labs, he added. "There are those, of course, who are familiar with the labs and believe that they are indeed the crown jewels of our R&D activity and need to be maintained as such," he said. "There are also many in Washington who see the national labs as anachronisms of the Cold War and see them as likely targets for accomplishing fiscal constraint."

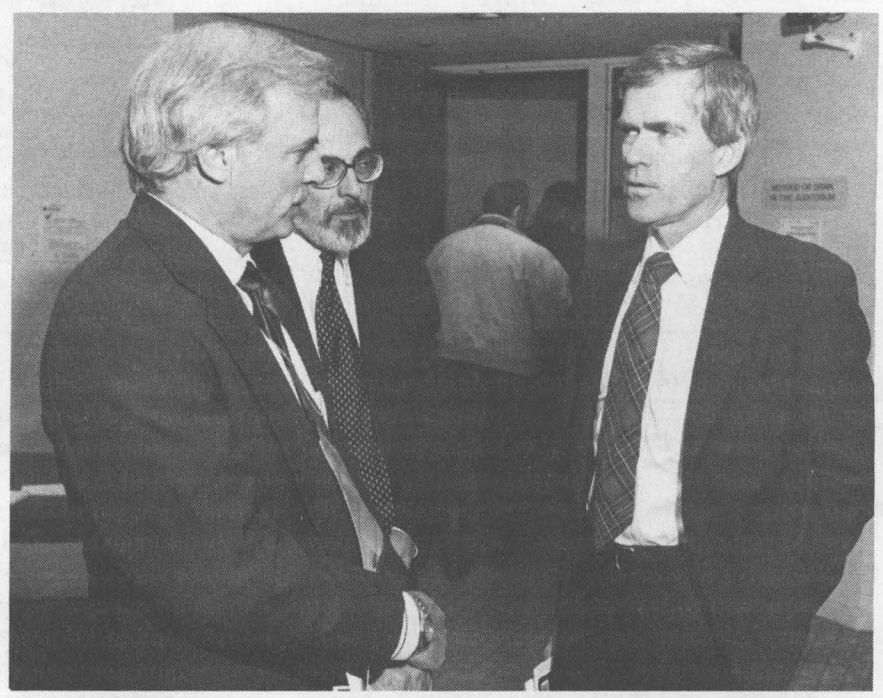
Although economic pressures will undoubtedly force the labs to shrink somewhat in the coming years, he said, he doesn't expect major cutbacks to result from the debate. "I think Sandia and the other DOE labs will emerge from this transition stronger than before," he said. He assured Sandians that despite rumors, he's heard of no plans to make drastic cutbacks to DOE labs.

His advice to Sandians is to pay close attention to the immediate needs of US industry as well as emerging long-term national issues. "Sandia's future will to a substantial extent be shaped by the extent to which the lab can build a corporate customer base," he said.

To help the DOE labs succeed in the midst of such change, Bingaman says he and US Senator Pete Domenici are sponsoring new legislation expected to streamline the processes by which the DOE labs engage in partnerships with industry.

Senate Bill 473, called the "National Competitiveness Technology Partnership Act of 1993" (NCTPA), passed the Senate last month and is due for House consideration in February. He expects that bill, a successor to the National Competitiveness Technology Transfer Act of 1989 (NCTTA), to enhance and simplify mechanisms for CRADA (cooperative research and development agreement) approval, make new models available for lab/industry partnerships, and give the DOE labs more flexibility to use federal funds where they see fit. [Watch the LAB NEWS for future coverage of this legislation.]

"I think [the NCTTA and NCTPA] are incremental steps that are beneficial to Sandia, Los Alamos, and the other DOE labs," he said. •JG



SENATOR BINGAMAN (right) is greeted by Labs Executive VP Jim Tegnelia (left) and Gerry Yonas, VP for Systems Applications Div. 9000, in the Technology Transfer Center lobby at Sandia/New Mexico Dec. 2. Bingaman spoke to nearly 500 Sandians about current perceptions in Washington concerning the future of the national laboratories.

Eliminates Stumbling Blocks

Partnerships with Automakers to Be Speeded by Agreement

DOE and its national labs signed an agreement Dec. 3 with the Big Three automakers that will make it easier for Sandia and other national labs to work with the automakers.

The agreement was called for in the Clinton administration's New Generation of Vehicles Initiative, announced in September, to produce high-performance, fuel-efficient vehicles.

The protocol signed by Secretary of Energy Hazel O'Leary, the heads of DOE's 11 national labs, and the auto companies commit the parties to use a master cooperative research and development agreement (CRADA) developed by the automakers.

"I'm delighted that these negotiations have produced a swift agreement," said O'Leary in a DOE statement. "This should dramatically reduce the time to initiate new cooperative projects by eliminating the barriers that historically have been major stumbling blocks to agreements with the auto industry."

Assembly-line CRADAs

"It means Sandia and auto companies should be able to sign three or four new CRADAs in the next few weeks or months," says Bill Robinson, Manager of New Applications/Industrial Partnerships Dept. 8702. Along with John Crawford (VP-8000), Bill was on hand in Washington for the signing ceremony.

The expected new CRADAs, which would involve work at Sandia/California and Sandia/New Mexico, include R&D in areas such as semiconductor materials and combustion modifications to control emissions.

The master agreement will allow national labs and auto companies to focus their discussions on technical issues, says Bill, rather than working out legal details such as patent rights for each CRADA. "A Ford vice president at the ceremony said we were changing the CRADA process from individual hand-crafting to an assembly-line method. That's a good analogy," he says.

Sandia is now participating in 19 auto-related CRADAs, says Bill, representing a total value of $26 million in efforts shared by the Labs and the industry partners.

The master CRADA will be used by the labs in all their cooperative projects with Chrysler, Ford, and General Motors under the US Council for Automotive Research. DOE says it plans to provide $16 million for such projects in fiscal 1994 and larger funding in future years.

Examples of technology areas to be addressed are lightweight materials, improved combustion, and high-speed computing applications. Research projects are to be aimed at one of three goals: advanced manufacturing technologies that make it easier to get new product ideas into the marketplace; technologies that can lead to near-term improvements in auto efficiency, safety, and emissions; and research that could lead to production prototypes of vehicles capable of fuel efficiency up to three times as great as present vehicles. •

Welcome

Albuquerque — Timothy Carr (7615). *Other New Mexico* — Rafael Aragon (10322), Jeffrey Betsill (6621), Clarence Esquibel (2481), Palmer Vaughn (6342), Wayne Woody (2481).

Elsewhere: *Virginia* — Steven Humbert (12334).

Congratulations

To Amy and Timothy (2345) Bielek, a son, Kevin Michael, Nov. 7.

To Cynthia (5838) Nelson, a daughter, Erika Lee, Nov. 13.

To Silvia and Doug (1332) Brown, a son, Nickolas Andrew, Nov. 16.

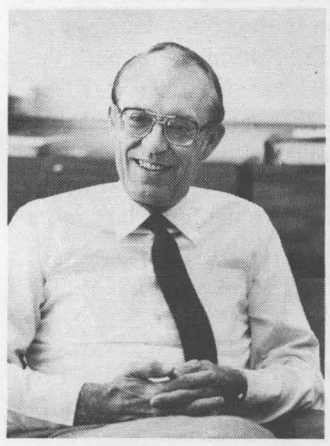
To Catherine and Randy (12630) Montoya, a daughter, Amanda Diane, Dec. 4.

Helped Develop US 'Power Base'

Orval Jones Receives DOE Distinguished Associate Award

Recently retired Sandia Executive Vice President Orval Jones received DOE's prestigious Distinguished Associate Award in a ceremony at the Labs on Nov. 30.

Everet Beckner, DOE's Principal Deputy Assistant Secretary for Defense Programs, presented the award to Orval for "his distinguished and unique contributions to nuclear weapon safety and security, and for his outstanding leadership in establishing programs of utmost importance to the security and economic well-being of the United States." Bruce Twining, Manager of DOE's Albuquerque Operations Office, nominated Orval for the award, which was authorized and signed by Secretary of Energy Hazel O'Leary.



Orval Jones

Beckner was a long-time Sandia employee and was VP for Defense Programs before leaving to work at DOE Headquarters in July 1990. Just before presenting the award to Orval, Beckner mentioned that Orval's career was so prestigious that the letter nominating him was three pages long, and joked that because he had known Orval throughout his career, he knows for sure that everything in the letter is true.

Orval retired from Sandia Sept. 30 after a 32-year Sandia career. He was Executive Vice President for Programs at the time, a position he had held since 1986. Other upper management positions he held at the Labs include Director of Solid State Sciences Research, Director of Nuclear Security Systems, Director of Nuclear Waste and Environmental Programs, Director of Engineering Sciences, VP for Technical Support, and VP for Defense Programs.

The letter says Orval was nominated for his contributions in nuclear weapon safety and security, research in shock-wave physics, research and development innovations, recruitment of talented young people to careers in energy and defense, and overall excellent executive management for Sandia.

The nomination letter also notes that Orval is "well known throughout the defense community for his major contributions in developing the science of shock wave physics, and for developing comprehensive, effective safeguards and security systems for nuclear weapons during transportation and storage." He is also cited for having had "significant impact on the design of safe nuclear weapons and nuclear safety assessments."

The letter goes on to detail Orval's many accomplishments in his Sandia management positions (covered in some detail in the Oct. 1 LAB NEWS the day after his retirement) and listed his outside activities and honors. Among many other honors, Orval is a Fellow of the American Society of Mechanical Engineers and received the Colorado State University 1982 Engineering Alumni Individual Achievement Award. He was instrumental in establishing a major joint nuclear weapon working group with the United Kingdom.

Peace Preserved through Strength

When accepting the award, Orval said it was "a real privilege during my career to have been part of the development of the 'power base' of the United States.

"I hate to say this, but unfortunately it does not appear that the human race is becoming kinder and gentler — as witnessed by recent events in Bosnia, Somalia, and elsewhere. I believe that peace is preserved through strength. I am proud to have been a part of preserving US strength through the development and maintenance of our nuclear weapons, and more recently through attempting to preserve our economic base of power.

"I thank the Department of Energy and Sandia for the opportunities I have had. I am deeply grateful and appreciative for this award." •LP

(Continued from Page One)

Robotics Retraining

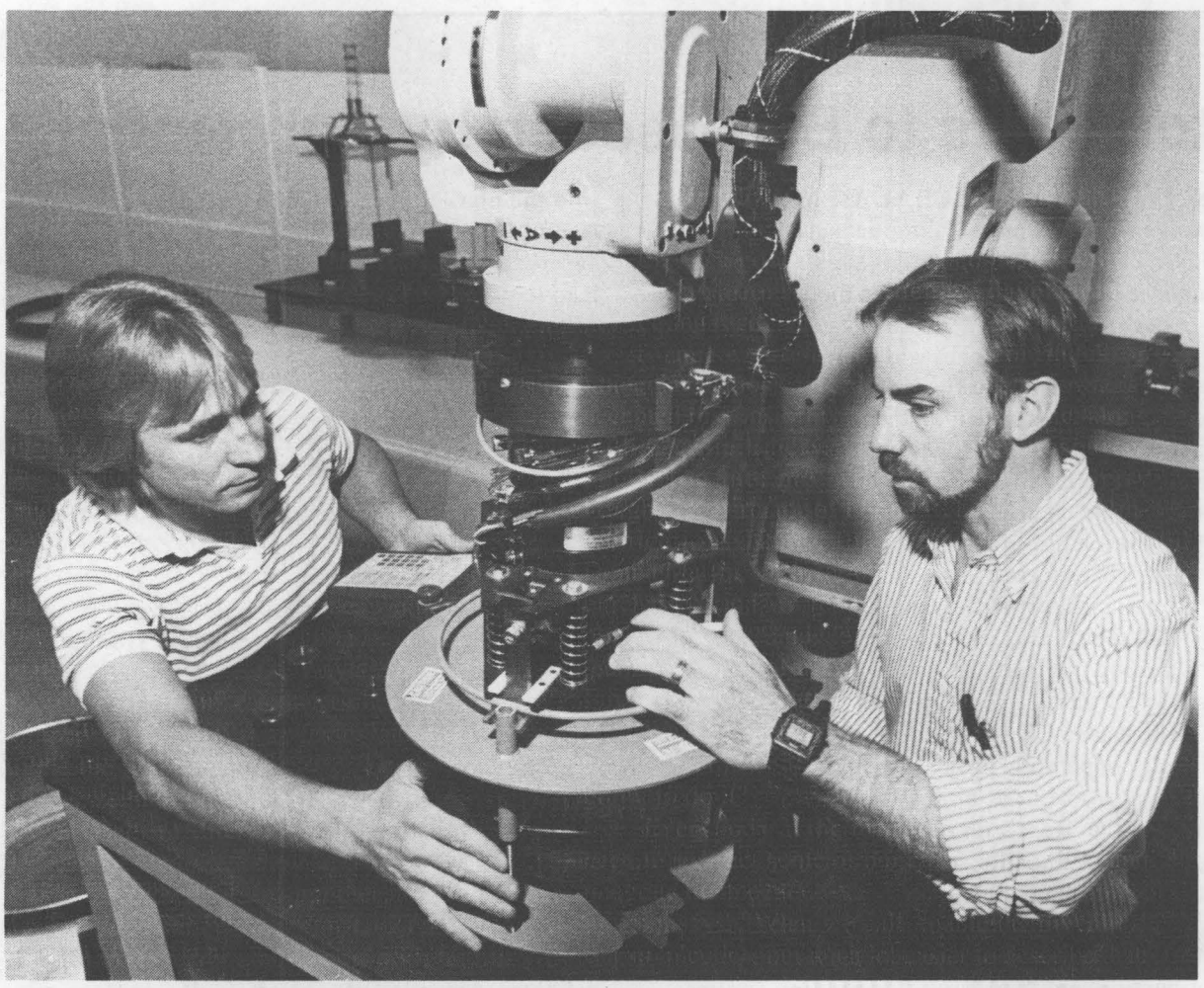
and relevant to intelligent systems and robotics, then hand the actual educating process to specialists in that field.

Labs Would Become 'Classroom'

"We'd like to expand the program so it applies to any engineer, and if we can get funding, then make it into a program that can be used at universities," he says.

Further possibilities are to make IS&RC into a "virtual robotics department," says Jerry. "We could provide the entire laboratory for robotics classes that could be held 1,000 miles away, allowing those teaching the classes to leverage our millions of dollars worth of equipment so they wouldn't have to buy all that hardware.

"In addition, we've developed multimedia education and training tools, such as a prototype analog signal processing course that combines graphics, animation, and sound," he adds, "and a virtual reality-based training system that allows access to video, text, and still photos from a virtual reality model. These advanced knowledge interfaces will speed learning even more." •HK



WALT WAPMAN (left) of Intelligent Systems Dept. 2171 is one of the former Defense Programs Sector engineers who have taken advantage of the Compete Program to transfer into robotics work. Walt and Howard Kimberly of Manufacturing Systems Dept. 2172 inspect the safety latch mechanism on a robotic gripper.

Sandia's Earlier Role Produced Robotics Expertise

Work generated by its role within the DOE national labs complex during the Cold War is fueling Sandia's emergence as one of the leading robotics research and development labs in the nation's struggle to remain competitive in the global economy.

Sandia has used its role as DOE's largest robotics R&D program to stimulate new approaches to integrated technology development. Its unique accomplishments are being made available to other US robotics developers for integration into operating systems.

Among recognized accomplishments are advances in intelligent system architectures; computer models that guide robots in defined work spaces, and sensors that evaluate those spaces and adjust the computer models; and sensors that monitor robot motions and automatically adjust operations to ensure safe task completion.

Concrete results of these developments include the "Mini-Lab" concept that can deploy a robot into a hazardous environment with sensors that first characterize the hazardous waste present then devise a model to automate waste cleanup operations. The same operating principles have been applied to inspection of aircraft and other structures, surveillance and safeguards, and quality assurance in production. Specifically, such systems are able to check for corrosion and pitting, weld integrity, surface and edge roughness, and subsurface fabrication flaws in layered composite structural materials.

Sandia robotics expertise has been applied to developing cleanup methods for underground storage tanks at DOE's Hanford, Wash., site; laser-based mapping; and disassembly of nuclear weapons being removed from the stockpile.

Several Focused on New Mexico

Sandia Now a Participant in 12 Technology Reinvestment Projects

Three groups of federal grants in the Technology Reinvestment Project (TRP) have been announced, and Sandia is a partner in 12 of the 162 projects funded so far. A final group is to be named this month, but had not been announced at LAB NEWS press time.

The awards are intended to help create new technologies and products, increase the competitiveness of small and medium-sized companies, train workers for manufacturing jobs, and retrain defense workers. Costs are shared by the awardees and the federal government.

The first announcements were made in October, including three projects in which Sandia is participating (LAB NEWS, Oct. 29). Successive announcements of funded projects occurred Nov. 24 and Dec. 3. Senator Jeff Bingaman chaired the subcommittee from which the TRP legislation came.

Following are summaries of the nine latest projects Sandia is participating in, plus another that Sandia is supporting. A point of contact for more information about the Labs' role is given at the end of each entry (some names may change).

New Mexico Manufacturing Extension Program — The non-profit New Mexico Industry Network Corporation will lead a consortium to coordinate and expand assistance to manufacturers in New Mexico and the El Paso, Texas, area. The project will link electronic data bases and offer technical and business services, defense conversion assistance, technology commercialization assistance, and management and operations assistance to 3,300 small and medium-sized manufacturers. Cost: approximately $13.2 million over the first two years. [Arlan Andrews (2902), MS 0955, (505) 844-1627]

The Dual-Use Marketplace: Assisting Defense-Dependent Businesses Through Electronic Commerce — The Texas Innovation Network will create an Internet-based dual-use technology marketplace to help bring technologies to market. This project will pilot standards for describing technologies, create software to let participants collect information, and build a public-access data base for technical and business assistance. Cost: approximately $400,000 over two years. [John Otts (4204), MS 1380, (505) 271-7846]

Manufacturing Extension Partnership National Interactive Telecasts on Competitive Manufacturing Technologies and Techniques — The non-profit National Technological University will lead an effort to provide national interactive satellite telecasts to smaller manufacturers attempting to improve their manufacturing competitiveness. Federal laboratories, technical societies, manufacturing centers, and private companies will provide technical expertise. Cost: approximately $2.6 million over two years. [Barry Granoff (6608), MS 0754, (505) 845-9377]

Electronic Information Services for the Tooling and Machining Industry — The National Tooling and Machining Association, with four DOE labs and the National Institute of Standards and Technology's Manufacturing Technology Centers, will establish an electronic information network for small tooling and machining companies. The goal is to help a critical industry modernize and improve its competitiveness. The network will let companies obtain technical information from current-practices data bases, get assistance and consultation, and reach business news and communication services. Gradually increasing user fees will make the system self-supporting after three years. Cost: approximately $1.8 million over two years. [Bob Reuter (2401), MS 0958, (505) 845-9200]

New Mexico Technology Deployment Pilot Project — The Research Institute for Assistive and Training Technologies of the University of New Mexico, with Sandia and Laguna Industries, will identify and transition assistive and training technology from existing sources for use by small businesses. Assistive technology is used to improve the capabilities of people with disabilities. Cost: approximately $4.5 million over two years. [John Bode (4520), MS 0159, (505) 844-9440]

The Manufacturing Engineering Education Partnership — Pennsylvania State University, the University of Washington, the University of Puerto Rico, and Sandia will create an alternative core curriculum in undergraduate engineering focused on manufacturing. This new curriculum will feature practice-based courses, building prototypes in a "learning factory," and competing for internal funding to build a new "product" on time and within budget. The schools expect this new curriculum to eventually attract one-third of their undergraduate engineering students. These universities graduate 4 percent of the nation's engineers each year, including 4.2 percent of the women and 11.7 percent of the minority engineers. Total cost: approximately $7.1 million, more than half of which will be paid by the proposers. [Arlan Andrews (2902), MS 0955, (505) 844-1627]

Manufacturing Engineering Education Program — New Mexico State University, Sandia, and Los Alamos National Laboratory will offer manufacturing engineering knowledge to students from industry and from New Mexico State's schools of Engineering and Business. This project will use an integrated systems manufacturing laboratory, laboratory simulations, a teaching factory, and new manufacturing education facilities. Cost: more than $20 million over three years, with the proposers paying most. [Arlan Andrews (2902), MS 0955, (505) 844-1627]

Note: The following two projects, led by the University of New Mexico, are interrelated with the New Mexico State University project described in the previous paragraph.

Apprenticeship-Oriented Education and Extension Training for Semiconductor/ Electronics Manufacturing — More than 30 educational, commercial, technical, and governmental organizations will work to improve apprenticeships for students and small vendors in the Albuquerque area. The goal is to broaden manufacturing education at all levels, emphasizing curriculum development. New educational methods will include interactive video, models of environmental effects of manufacturing, and hands-on teaching with state-of-the-art equipment. Particular efforts have been made to reach rural and Native American communities. Cost: approximately $4.1 million over two years, with the proposers paying more than half. [Arlan Andrews (2902), MS 0955, (505) 844-1627]

Semiconductor/Electronics Manufacturing Experts in the Classroom — More than 40 organizations will work to upgrade manufacturing education in the semiconductor industry. This project will focus on modern manufacturing techniques, design for manufacturing, and the management of people and businesses. More than 80 manufacturing experts will help teach 19 courses. Besides helping in the classroom, national laboratories and corporations will provide tours and training sessions, mentoring, and curriculum advice. Cost: about $1.2 million over two years, with the proposers paying more than half. [Arlan Andrews (2902), MS 0955, (505) 844-1627]

Note: Sandia is not an official participant in the following project but is among the organizations that have expressed support.

A Program for Manufacturing Management in Support of the TRP — The University of Pennsylvania will extend its Executive Master of Science in Engineering program to meet the retraining needs of defense-industry managers. TRP funds will help create partial fellowships for defense-sector technology managers and new courses on applying modern business practices to manufacturing. Sandia is among the organizations supporting the program. Total cost: approximately $1.3 million for three years, at least half being provided by the proposers. [Ray Harrigan (2102), MS 0951, (505) 844-3004]

Following are titles and Labs points of contact for the three previously announced projects that Sandia is participating in:

The MCM [Multi-chip Module] Consortium — Path to a Globally Competitive MCM Industry in the US [Dave Palmer (1333), MS 1082, (505) 844-2138]; **A System for Non-invasive Arterial Blood Gas Measurement** [Jim Borders [1823], MS 0343, (505) 844-8855; **Energy and Environmental Technology Access Strategy for Small-Medium Manufacturers** [Phil Van Buren (6613), MS 0746, (505) 844-6071. •

this month in the past...

Sandia LAB NEWS

40 years ago... The news in 1953 was much more personal than today. A sampling of items reported: Ken Sarason was a best man when he flew to Houston for a friend's wedding. Vernon Miklebost was "lovingly re-doing" a 1936 Plymouth. Marty Williams returned to work after battling a severe cold for one week. John Foster was proud new owner of a home. R.D. Flaxbart received happy birthday greetings from his co-workers. And finally, this hot item: Arlis Gruenoch spent a week's vacation at home.

30 years ago... Technical employee exchanges with Russia and the former Soviet Union are pretty common today, but were unusual in 1963 when the Cold War was being waged in full force. One Sandian, however, spent five months in Moscow as an exchange scientist that year. Charles Stein, a Labs metallurgist in 1963, worked at the Institute for Metallurgy in Moscow, researching deformation of metals at high temperatures. "Life in Russia is grim," he said. "Living conditions are poor, but particularly noticeable are the general attitude and grim outlook of the people."

20 years ago... The Sandia Labs Federal Credit Union got into the energy-saving spirit, announcing that it would begin making loans on motorcycles because they use less gas than automobiles. The going loan rate was 10.8 percent for 24 months. (Today you can get a three-year Credit Union motorcycle loan for 8.7 percent.)

10 years ago... The Labs' Employee Contribution Plan (United Way) contributions topped the $1 million mark for the first time. More than 87 percent of Sandians pledged money during the drive. Pledges and contributions totaled $1,038,658. The LAB NEWS went modern, replacing the editor's and writers' typewriters with word processors. About 225 Native American students attended an American Indian Science and Engineering Society national meeting at Sandia.

Sandia News Briefs

Jacobs Receives Army's Outstanding Civilian Service Medal

Jim Jacobs (7900) was recently awarded the Army's Outstanding Civilian Service Medal. He was cited "For serving as a member of the Army Science Board for the period January 1988 to December 1993 and also as chairman of the board for the period October 1991 to October 1992. His superior technical and managerial abilities contributed significantly to the value of this cohesive, multidisciplinary panel of experts. Through his substantive participation in technical issues and his personal leadership and direction, the Army Science Board provided timely, practicable, and meaningful advice which significantly influenced many future programs. Mr. Jacobs' personal dedication reflects great credit on himself, the Army Science Board, and the Department of the Army."

Credit Union Sets Special Dividend for 1993

The Sandia Laboratory Federal Credit Union has declared a bonus dividend of $421,000 to be paid to members Jan. 1, 1994. The Credit Union's board of directors approved the dividend, computed as a 10-percent bonus on savings account dividends paid during 1993. A key factor making the bonus dividend possible, according to a Credit Union statement, was a 1993 decrease in the expenses of operating the Credit Union. Additionally, the ratio of reserves to assets has grown through the year; reserves are projected to reach about 8.75 percent of assets by the end of 1993. "We will continue to work to improve our efficiency and our service quality during the coming year," said Credit Union President and CEO Christopher Jillson.

Motor Pool Waste Minimization Activities Recognized

Pollution Prevention Advisor, a DOE Defense Programs quarterly newsletter, noted in its Fall 1993 publication that Sandia's Motor Pool Services Dept. 7614 is saving thousands of dollars — and lots of waste — through its waste minimization activities. Total savings for the Motor Pool is $47,730 a year, through such activities as using a car-wash water recovery system, leasing recycled petroleum naphtha, leasing cloth rags that are supplied and laundered by an EPA-monitored cleaning contractor, smart procurement of tires and batteries, and recycling metals, motor oil, transmission fluid, freon, and antifreeze. Motor Pool employees set up these waste minimization activities on their own initiative.

Send potential Sandia News Briefs to LAB NEWS, Dept. 12660, MS 0413.

UNITED WAY of Central New Mexico helps kids like this lad get the care they need from 70 health and human service programs. Last year, one out of every three people in Bernalillo, Sandoval, Torrance, and Valencia counties received help from United Way. The organization has responded to a number of unusual needs recently and would welcome further contributions. Sandians who wish to give a little extra this holiday season may do so either through the Labs' Employee Contribution Plan (ECP) or directly to United Way. For information about ECP, call Juanita Sanchez (12640) on 844-1307. To get information from United Way, call 247-3671.
(United Way photo by Cary Herz)

Feedback

Q: Please address my concern to those who will decide how much medical insurance we employees will have to start paying.

I rarely use medical insurance. I hope we will be able to opt for a larger deduction — $500, $750, $1,000 — and then not have to pay anything for insurance. My raises are so small that I hate to have them go to paying for something I don't need or want, like insurance.

A: Under the new Martin Marietta-DOE contract, premium sharing is required.

The current agreement with DOE is that premium sharing will begin Jan. 1, 1995 for those employees with dependents. The 1995 rates have been predetermined, and are set at $17 per month for employees with one dependent and $28 per month for employees with two or more dependents. If an employee has no dependents, there will be no premium sharing. Each employee will be required to enroll any eligible dependents within 30 days of that dependent eligibility, or during the annual open enrollment period.

Group health plans such as the Sandia Medical Care Plan and the Lovelace Health Plan provide an affordable means of having protection from unforeseen events. Premium sharing is how we all share equally for this protection from the unexpected. The deductible and the maximum an individual will pay out-of-pocket is how those who actually use the plan pay more based on their salary [ability to pay].

Over the next several years, Sandia will probably implement new plan designs that encourage good use of health care dollars and allow for an equitable sharing of costs.

Ralph Bonner (3500)

90.7 MHz, 24 Hours a Day

Radio Sandia Now KSNL-FM

Radio Sandia has (finally) gone FM!

After completing a year-long application process, Sandia/New Mexico's 24-hour-a-day news source is now KSNL, at 90.7 MHz on the FM dial.

"It seems like a long time to make such a simple decision," says Bob Weaver (1953), who coordinates all of Sandia's requests for radio frequencies. "But you have to remember that the official policy, in this country, is to keep 'the government' out of the commercial portion of both the AM and FM bands. The logic here is that the government shouldn't be allowed to promote itself on the public's airwaves. So the FCC [Federal Communications Commission] looked long and hard at what Radio Sandia does before granting it an 'educational FM' license.

"We are in fact, the only non-military agency in the government to have a radio license — when the *Albuquerque Journal* called us 'innovative corporate communication' early this year, they were exactly right."

The license was effective Dec. 6, and Bruce Hawkinson, Manager of Electronic Communications Dept. 12662, decided on the morning of Dec. 7 to go FM that afternoon. "Several reasons for that decision," says Bruce. "First, DOE Secretary Hazel O'Leary announced some significant changes in DOE's classified information policy, which mean some changes in what we protect and what our citizens are able to learn about what we're doing, and have done.

"Second, our new FM transmitter on Manzano Peak was already up, and linked, via microwave, to our studio in Sandia Research Park, east of the Eubank gate. Bob Weaver and his crew get the credit for getting the necessary equipment installed and operating. Our friends on Kirtland's Land/Mobile communications team get some credit, too — they carried the transmitter to the top of the mountain on their Humvee.

"And third, I felt strongly that our listeners should be the first to know that we'd gone FM. I really didn't want them to learn that news by reading it somewhere — even in the LAB NEWS!"

Retirees Can Keep Up with the Labs

Although KSNL-FM is limited, like KOP20, Radio Sandia's AM station, to 10 watts power, the FM signal means far greater clarity and a wider range than AM. In most cases, the signal will reach into workplaces "and into the homes of Sandia and DOE/AL employees and retirees, if they're in the city," notes Bob.

"The push for FM was a direct response to the most common criticism we received during three yearly surveys of Sandia listeners," says Bruce. "We heard reassurances — 'It's the easy way to keep up with all the stuff happening around here,' for example. And 'I like to hear what the people leading us sound like.' "

The most recent random survey showed that a maximum of 48 percent of Sandians listen to Radio Sandia, a minimum of 17 percent. "Realistically, we probably hit nearly a third of our target audience with some regularity, and those folks tend to be the movers and shakers who are moving us all into the post–Cold War culture," says Bruce. "Our survey also indicated that about half the respondents — and we had a 65-percent response rate — would listen to Radio Sandia if we went FM.

"That is to say, our survey responses included lots of 'Your signal is lousy' comments. That's why we're excited about going FM. We hope that many Sandians and DOE people will tune us in if they're at all interested in trying to keep up with what's happening here — and in Washington — that's going to affect us." •

UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS

Deadline: Friday noon before week of publication unless changed by holiday. Mail to Dept. 12660, MS 0413 or fax to 844-0645.

Ad Rules

1. Limit 20 words, including last name and home phone (the LAB NEWS will edit longer ads).
2. Include organization and full name with each ad submission.
3. Submit each ad in writing. No phone-ins.
4. Use 8½- by 11-inch paper.
5. Use separate sheet for each ad category.
6. Type or print ads legibly; use only accepted abbreviations.
7. One ad per category per issue.
8. No more than two insertions of same "for sale" or "wanted" item.
9. No "for rent" ads except for employees on temporary assignment.
10. No commercial ads.
11. For active and retired Sandians and DOE employees.
12. Housing listed for sale is available for occupancy without regard to race, creed, color, or national origin.
13. "Work wanted" ads limited to student-aged children of employees.

MISCELLANEOUS

CAMPING MEMBERSHIP, Sandia Crest NMCR, coast-coast available, $700. Cianciabella, 268-7150.

FOOD PROCESSOR, Cuisinart DLC-7 Superpro, $50. Trellue, 292-7369.

PARTS for '84 Mazda GLC: dash cover, $25; wheel covers, $7/ea.; wheel, 13-in. steel, $18; floor mats, $10; tire, Pirelli 175/70R13 SBR, $10. Martel, 293-1892.

COPIER, Sharp Z-50, new consumables, $180; Litton microwave oven, w/in-cabinet mounting hardware, $75. Both in excellent condition. Barnard, 256-7772.

ROAD & TRACK MAGAZINE, from 1969 on; sports car books from 1960s, $350; *National Geographic* from 1969, $250. Peterson, 298-1235.

RIFLE, Browning .243 BLR w/Nikon 4x scope, case and ammunition included, $450. Jimenez, 296-9256 after 7 p.m.

COMPUTER, Macintosh IIci, 5MB RAM, 80MB HD, w/compression card, keyboard, mouse, software, $1,400 OBO, w/14-in. color monitor, $1,700 OBO. Gomez, 831-3518.

BROILER/GRIDDLE/DEEP FRYER COMBO, Jenn-air plug-in unit, $125 OBO. Bailey, 281-4383.

DARKROOM EQUIPMENT: trays, tank, bottles, chemicals, focus scope, print dryer, books, miscellaneous, make offer. Drotning, 294-4807.

EXERCISE VIDEOS, Richard Simmons' "Sweatin' to the Oldies," set of five and two cassette walking tapes, $50. Wanya, 891-0018.

METAL DOOR, 36-in., w/hardware, good condition. Ask for Leonard. Gutierrez, 877-9960.

WALNUT, 165 bd. ft., 4/4, $3.60/bd. ft.; 84 bd. ft., 8/4, $4.25/bd. ft.; 6 bd. ft., 8/4 wenge, $10/bd. ft. Grafe, 897-0776.

EXERCISE BIKE, $25. Carpenter, 294-1372.

WOOL COAT, by London Fog, red w/black fur collar and cuff, child size 12, perfect condition. Wagner, 823-9323.

CHICKEN WIRE, approximately 15-20 feet, 3-1/2 ft. tall, free. Hammond, 294-2045.

SNOW SHOES, adult size. Benischek, 268-0658.

SOLAR PATH MARKERS, in warranty, $20; two evaporative pre-coolers for refrigerated AC, new, $50/ea.; load E tire, 8.75x16.5LT, $25. Glaser, 293-8110.

ARCHITECTURE SOFTWARE, for Macintosh, "Design Your Own Home," $15. Holmes, 292-0898.

SAILBOARD, Mistral Malibu, 11' 6", 6.6 Gaastra cambered sail, retractable center board, harness lines, foot straps, complete, excellent performance, good condition, $550. Fine, 281-2116.

MANDOLIN, Gibson, Sunburst Model, excellent condition, book value $750, sell for $450. Carlson, 888-4970.

REFRIGERATOR, side-by-side, GE model, 19 cu. ft., olive green, $50; sofa sleeper, queen-size, off-white, like new, $150. Floran, 237-2620.

PUTTERS: a variety of classic, unusual, or merely old putters, $5-$100; one lot of 50, $100. For gifts or better putting. Homer, 836-5043.

SNOW BLOWER, 42-in, on 16-hp Allis-Chalmers garden tractor, hydrostatic drive, includes mower and chains. Whitley, 293-6094.

CORDLESS PHONE, AT&T 5200, new condition, new price $80, sell for $40. Montoya, 296-4268 before 9 p.m.

KITCHEN CABINETS, full set, birch pecan-stained, raised-panel doors, double-oven enclosure, two lazy Susans, $350. Mauldin, 293-3763.

COMPUTER, Tandy 1000EX, 256K expandable to 640K, 3-1/2 and 5-1/4 drives, monochrome, MS-DOS, Deskmate included, great for beginner, $195 OBO. Hosking, 836-2128.

FURNACE, 80,000 Btu, Payne upflow gas, best offer. Carter, 294-3267.

SOFA, 7-ft., and loveseat, excellent condition, $350 OBO; Thomas organ, $200 OBO. Must sell, need the room. Jenkins, 828-2120.

EXERCISE MACHINE, band-type, home gym cross-trainer w/stepper, digital timer, Weider Model E220, like new, $150. Patrick, 265-4569.

GAS RANGE, coppertone, $75; chain saw, 23-in. bar, $75; floor buffer, $10; fireplace set, $5. Ayotte, 268-1864.

ROLLER BLADES, TRS Lightning, size 7, w/wrist guards and knee pads, $200; formal dress, size 9, black velvet; gloves, bag, jewelry available. Estill, 883-1531.

TIRE CHAINS, two sets, fit large tires, 10x15-10x16.5, new in box, $30/set or both for $50. Kuehne, 281-5446.

COMPUTER, Macintosh Classic, w/keyboard, mouse, Word 5.0, system software, manuals, and 20MB HD, needs new floppy, $275 OBO. German, 883-7002.

MICHELIN RADIAL TIRES, all-season, two, 205x70R14, w/lightweight alloy rims for Caravan/Voyager, $275. Peterson, 298-1235.

LINED DRAPES, white, w/brass drapery rod, fits 70"x60" window, excellent condition, $35. Clevenger, 821-0046.

CONDOMINIUM, at Pagosa Springs, Colorado, near Wolf Creek Ski Area, elegant double unit, sleeps 8, Feb. 19-26, $450. Diegle, 856-5608.

CAR SEAT, for infant, almost new, $30; Jenny Lind cradle, $30; boy's clothes, 0-12 months, miscellaneous prices. Pullen, 291-1555.

WOOD BURNING STOVES, Sierra or Vermont Casting Soap Stone. Both in great shape. Ask for Steve. Garcia, 343-8207.

ANTIQUE OAK ICEBOX, White Mountain Grand, $500 OBO; Ithaca shotgun, side-by-side, $500 OBO; Armstrong flute, $125. Petersen, 275-7467.

PHOTOCOPIER, thermal, letter-size, "Copy Pro," $50. Hansche, 281-5623.

SOUND SYSTEM, Yamaha, two 3-way 150-watt speakers, dual cassette deck, amplifier, turntable, tuner, cabinet, $250 OBO. Marshall, 281-5821.

RANCH MINK JACKET, hip length, size 18, excellent condition, $800. Stocks, 823-1541.

BED, king-size, Simmons orthopedic, two mattress pads, six sheets sets, bed frame, blanket, pillows, good condition, $300 OBO. Hernandez, 299-5749.

ROLLER SKATES, girl's size 7, $12. Ottinger, 275-2348.

POOL TABLE, all wood, w/1-in. slate, $1,199, or make offer; two-unit entertainment center, dark wood, $499. Laguna, 298-1732.

DINETTE TABLE, 41-in. square, oak, w/Formica top, $50; Whirlpool full-size microwave, excellent condition, $120; kitchen sink, Kohler, white ceramic, 22"x33", $50. Chael, 294-8757.

CRIB, Simmons, w/mattress, natural maple, looks brand new, $250. Bauer, 299-0640.

CHRISTMAS TREE, Scotch pine, artificial, 6-ft., $10 OBO; two metal bed frames, twin and full-size, $10/ea. Harris, 299-4559.

ELECTRONIC ORGAN, Lowrey, w/Magic Genie cards, $600; carpet, 6'2" x 6'3", has extensions attached for closets, plus padding, $14. Watson, 298-2374.

NINTENDO, w/Power pad and four games, $80. Ask for Joe. Lovato, 836-3517.

SOFA SLEEPER, chocolate brown, queen-size, excellent condition, $225. Lowrey, 281-9255.

MISCELLANEOUS: Sanyo, tape/tune/record, $100; 9-pin printer, $45; baby stroller, $30; Fisher Price bike seat, $15; 20MB Drv/Cont, $40. Bodette, 275-9722.

SKI BOOTS, Lange/XLR, size 11-1/2, $75; rear fender for '72 VW Bug, $20; rear deck lid, $30; Kenmore washer, needs work, $20. Szklarz, 292-3995.

COUCH, blue, 3-cushion, 7-ft., $75; Roadmaster exercise bike, w/speedometer, $50; restored rocking chair, w/cane back and bottom, $100. Herr, 281-0473.

PIANO, dark brown, Currier spinet, excellent condition, $750 OBO. Bouchard, 262-0007.

HARD DISK, Conner, 84MB, 16MS, w/cache, low hours, $90; motherboard, 386 DX 25/33, w/387, $100. Lanes, 856-6237.

TICKETS, two, Dallas Cowboys vs. Washington Redskins, Dec. 26, Texas Stadium, $225 for pair. Ewen, 836-3563.

VIDEO CAMCORDER, Minolta VHS, full-size, new belts, cleaned, $350. Orear, 897-0567.

Deadline Change

The next Lab News will be published Jan. 7. Deadline for Unclassified Ads is 4:30 p.m. Thursday, Dec. 23.

GUITAR RIG: Mos-Valve amp, Roland effects processor, w/footswitch, stereo EQ, speaker cabinet, rack, complete, $750. Ask for John. Stuppy, 898-4720 anytime.

MINK COAT, contemporary styling, black, gorgeous Christmas gift, well loved and cared for, warm and huggable, $1,900 OBO. Spencer, 243-1776.

LEAD CRYSTAL STEMWARE, 10 each water and dessert goblets, eight wines, four cordials, excellent condition, $50. Vaughan, 291-9857.

WOMAN'S WATCH, Seiko, gold w/diamond, $100; cocktail ring, oval sapphire w/diamonds, size 6, appraised at $695, sell for $200. Sobel, 281-8792.

SKI RACK, Barrecrafters Model SX72, fits medium to large cars, w/rain gutters, excellent condition, $60. Adelmann, 898-0335.

DINING SET, black lacquer, Italian, w/six chairs, elegant; matching chandelier. Very good condition. Williams, 299-9150.

CEMETERY PLOTS, three, in Sunset Memorial Park, $600. Brown, 294-2375.

SOFA & LOVESEAT, mauve, gray, white, $400 OBO; dining room table, black/brass/cream, glass top, $200 OBO. Ask for Debbie. Manzanares, 897-8736.

DRILL PRESS, Craftsman, 15-1/2-in. floor model, 8-spd., $150. Bear, 881-7128.

ROCKING CHAIR, solid hardwood, high back, $65; motorcycle helmet, safety high-impact, windshield, gray, fiberglass, "Star LTD," $50 OBO. Stang, 256-7793.

ELECTRIC ORGAN, Allen, excellent condition; doll house, log cabin-type, 18"x36", unusual design; hide-a-bed, good condition. Neas, 293-3422.

SOFA, 90-in., floral, $220; striped lounge chair, $110; three occasional tables, $50/ea.; Naugahyde chair & ottoman, $50. Bear, 881-7128.

GARAGE SALE, 1101 Monte Alto Ct. NE, refreshment bar, executive hand-carved desk. Schulte, 293-4556.

SKIS, Dynastar Viridium, 185cm, bindings never installed, new, good Christmas gift, $100. Kepler, 296-0402.

RIFLE, .22LR, Marlin Mod60, new scope lock, bag, $125. Stephens, 822-8584.

SKIS, Kastle, 66-in., also poles; Munari boots, size 5-1/2. Sell together for $50. Culler, 891-8537.

SEWING MACHINE, Singer, Simanco straight stitch, mounted in wooden cabinet, $75. Corcoran, 265-1694.

MOVING SALE: furniture, small household appliances, kitchen items, 3- & 5-drawer chests, lamps, full-size bed frame. DeWerff, 298-1029.

COMMODORE 16, w/tape drive and word processor, $25. Zirzow, 281-9896.

TRICYCLE, Murray, 15-in., very old/sturdy, $50. Korbin, 299-9088.

BACK WINDOWS, for trucks, one Chev. S-10, tinted glass, $30; three Nissan, late model, one sliding-type, $25; $20/ea. for other two. Chavez, 842-6374.

TRANSPORTATION

'85 CHEV. CAVALIER, 4-dr., AT, 4-cyl., brown, two new tires, 132K miles, good condition, $1,300. Trellue, 292-7369.

'79 CHEV. MONTE CARLO, 2-dr., PS, PW, AT, V8, new brakes, old but runs well, $700. Smeltzer, 883-3109.

FISH & SKI BOAT, 16-ft. Larson, w/trailer, new tires, 75-hp Evinrude outboard, and life jackets, $500. Zamora, 294-3893.

'74 DODGE VAN, paneled, carpeted, 360 CID, AT, AC, PS, PB, 100K miles, good condition, $1,500. Sullivan, 265-8113.

VW SINGLE-CAB PICKUPS, two '61 models, one '70 model, no engines, $450-$1,650. Roberts, 1-864-3529 after 7 p.m.

'87 DODGE VAN, V8, 360 engine, high top, 48K miles, one owner, all power, good condition, $8,200. Tavasci, 898-5304.

'86 ACURA LEGEND, white, AT, moonroof, all power, loaded, pampered, $6,900 OBO. Smith, 298-5868.

BICYCLE, girl's 16-in., purple Giant "Whirlwind," like new, $65. Clevenger, 821-0046.

'84 FORD F250HD, diesel w/turbo, loaded, excellent condition, $4,900 OBO. Pendley, 293-2630.

MOUNTAIN BIKE, 23-in. Mongoose, IBOC Competition, speed shifters, computer. McMurtry, 298-2155.

BICYCLE, KHS Tri-Athlete, many custom components, $500 OBO. Petersen, 275-7467.

BICYCLES: child's Schwinn, 10-spd., red, $50; child's Schwinn Cruiser, black, $50. Both in very good condition. Harris, 299-4559.

BICYCLES: boy's Murray, 20-in., $15; Mongoose Californian w/Araya rims, $40. Lucero, 899-0521.

'90 JEEP GRAND WAGONEER, loaded, 59K miles, white exterior, tinted windows, very well maintained, $11,500. Ask for Joe. Lovato, 836-3517.

BICYCLE, 56cm, Trek 560, time trial set-up, $250; mountain bike, Rock Hopper, 17-in., $250. Bodette, 275-9722.

BICYCLE, boy's 16-in., $15. Herr, 281-0473.

'77 DATSUN 810 WAGON, AT, AM/FM cassette, 90K miles, all records, repair manual, dependable, $475 firmish. Kaestner, 265-0283.

'86 CORVETTE COUPE, 35K miles, red w/tan interior, excellent condition, $13,800. Lang, 292-3421.

'84 S-10 BLAZER, 4x4, Tahoe package, $4,000. Thomas, 292-0970.

'86 HONDA PRELUDE SI, 5-spd., white w/charcoal interior, reliable, economical, fun to drive, $5,800 OBO. Kaplan, 243-5670.

'85 ASTRO VAN, V6, PW, PL, PS, AT, AM/FM stereo cassette, AC, rear speakers, chrome wheels. Williams, 299-9150.

'88 MUSTANG HATCHBACK, 2.3L, fuel-injected, AT, AC, cassette stereo, tinted windows, alloy rims, $3,000. Ask for Greg. Pierce, 291-9430.

'91 GRAND PRIX, very good mpg, perfect condition; '84 VW Jetta, original owner, clean, reliable; '77 Volvo, runs well. Payne, 291-0124.

'69 CHEV. PICKUP, rebuilt 350 engine, new tires, book value $3,000, asking $2,700; bicycle, 20-in., Dyno, good condition, $250 new, sell for $125 Stephens, 822-8584.

'87 PORSCHE 924S, Guards red, AC, new clutch and brakes, stereo, 944 in 924 body, faster than a 944, many extras, $7,000 OBO. Dawson, 298-9508.

'72 VW SQUAREBACK, Type III, good condition, $1,790. Ross, 299-3023.

'79 VOLVO, 245 GL wagon, AC, leather seats, 4-spd., overdrive, steal it as is for $1,500. Olsen, 294-2333.

REAL ESTATE

3-BDR. HOME, west side, 1,800+ sq. ft., 1-3/4 baths, den, game room, fireplace, security bars, solar, storm windows, city view, $76,000. Tenorio, 836-4081.

3-BDR. HOME, 2 baths, 1,230 sq. ft., in I-40/Coors area, lots of extras. Lucero, 899-0521.

2.5 ACRES, heavily wooded, against national forest, 13 miles from Central/Tramway, wonderful, excellent water well, $34,000. Duncan, 281-8792.

3.1 ACRES, 17 minutes east of Albuq., all utilities, all fenced, excellent access, must sell, $32,000. Whitlow, 281-4739.

WANTED

SIMM MEMORY MODULES, four, 1 meg x 9 at 70 or 80 nanoseconds. Harris, 344-6640.

FRISBEE PLAYERS, all skill levels, to form frisbee or ultimate club for noon or after work. Bailey, 281-4383.

SWING SET, in good condition. Vigil, 865-6187.

AMATEUR RADIO HF EQUIPMENT, any condition, reasonably priced. Rieger, 281-0757.

TRUMPET. Laguna, 298-1732.

MACINTOSH HARD DRIVE, 20, 30, 40MB are OK, reasonable. Harris, 822-0236.

INTERNATIONAL CHINA, Cotillion Angelica pattern, place settings and serving pieces; queen-size headboard, mahogany or cherry. Atchison, 897-3289.

TRADE, my Compaq 286-20 portable computer for your treadmill, in serviceable condition, prefer 1-hp model capable of 8 mph. Scott, 281-4332.

PICKUP, Ford F-150 or equivalent, w/V8, AT, AC, in good condition. Beuchamp, 884-4749.

CHEV. SUBURBAN, '89-'91 model, 3/4-ton, in good condition, blue or white preferred. Rogers, 256-0066.

OPERATIONAL EXPERIENCES, w/Ford truck engines using Holley's Proinjection throttle body systems. Zirzow, 281-9896.

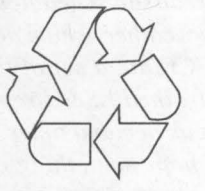
LOST & FOUND

LOST: Silver twisted bangle bracelet, between Bldgs. 858 and 892. Baldonado, 844-2076.

SHARE-A-RIDE

CORRALES RIO RANCHO VANPOOL has space available for new riders. Kuszmaul, 892-4466 or Terchila, 891-8478.

This newspaper is printed on recycled paper.



DO IT AGAIN! This newspaper can be recycled with regular Sandia office paper.

Coronado Club Activities

Party, Party — It's Hearty Fun at the Club Tonight

HOLIDAYS ARE COMING, and the Club helps you get into the mood tonight, Dec. 17, starting right after work. The Cantina will be open to offer delectable drinks and a chance to socialize. At 6 p.m. you can enjoy a buffet fit for kings and queens: baked ham, roast turkey breast, baron of beef, and poached cod, with all the accompaniments, for just $6.95 per person. Then (yes, there's more), at 7 p.m., the band "Together" takes the stage and plays your favorites until 11 p.m. You'll want to be there — call for reservations on 265-6791.

KIDS LIKE TO PARTY, TOO, and they get their chance Saturday, Dec. 18, from 9 a.m. to noon. Ho, ho, ho — the big guy in the red suit will be there, of course, along with the missus. There'll be magical entertainment by Big Foot the Clown. Excitement makes the little ones hungry, so they and the grownups can enjoy an a la carte buffet. Fun is guaranteed for all. Admission is free, but please note: This party is for members and members' kids only — no guests this time.

BACK TO BRUNCH — Just a quick reminder: Sunday, Dec. 19, will be the last Sunday brunch of the year. Brunch is served 10 a.m.-2 p.m., and Bob Weiler and Los Gatos play for the tea dance, 1-4 p.m. Call for brunch reservations — 265-6791.

HELP CLOSE THE CLUB — The Club will be closed Friday, Dec. 24, through Sunday, Jan. 2, 1994. But on Thursday, Dec. 23, there's gonna be a round of celebrating. The Cantina will be open, with a free munchie buffet to rebuild your strength after a hard day's work. It's also a bingo night, so here's a chance to choose your pleasure! By the way — play bingo that evening, and you might win one of the three $100 bills that will be given away.

For Your Benefit

Dental and Prescription Drug Plans Change

The address and toll-free customer service number for The Travelers, claim administrator for the Sandia Dental Expense Plan, will change on Jan. 1. The new toll-free service number is 1-800-842-3367.

New address for sending dental claims and other correspondence: Claim Administrator, The Travelers Insurance Company, PO Box 30992, Salt Lake City, UT 84130.

New claim forms will be issued to Just-In-Time (order number WHS 697770 EA) before Jan. 1 to replace those with the previous address and phone number. Old claim forms can be used after Jan.1, but the forms must be mailed to the new address.

Revised Booklet on the Way

You will soon receive a revised Dental Expense Plan Summary Plan Description booklet that replaces the edition dated Oct. 1, 1991. Active employees will receive this booklet through internal mail. Retirees will receive it at their home addresses. The new edition incorporates recent increases to the schedule of dental benefits for restorative procedures, and also reflects the increase from $1,250 to $1,500 in the annual maximum and the lifetime orthodontic maximum. The Travelers' new address and phone number are also included in the new edition.

Medical Care Plan participants should be aware of the following important information about the Prescription Drug Plan, which includes changes that take effect Jan. 1:

1. There is no increase for 1994 to the $7 generic and $12 brand-name co-payments for the Mail Service Program.

2. Claims do not have to be filed when you obtain your prescriptions at a Select Network Retail Pharmacy. K-Mart, Wal-Mart, Smith's, and Long's (in California) are Select Network Pharmacies. These pharmacies will file your claim for you through electronic submission to Mutual of Omaha.

3. If you don't use a Select Pharmacy, you must file your own claim using a new prescription claim form. The Medical Care Plan claim form has been revised and combines the Prescription Drug Plan claim form and the Medical Care Plan claim form. Prescription drug claims are to be be mailed to Caremark for processing, and Caremark will send claims to Mutual of Omaha for payment.

New claim forms and a Caremark announcement of the above changes will be sent to all Medical Care Plan participants before Jan. 1.

Claim Forms through Sandia Line

You can obtain dental claim forms, medical care claim forms, or other health care plan forms from Sandia Line on 845-6789. (If out of Albuquerque, dial 1-800-417-2634 first, then 845-6789.) When the recorded voice answers, enter 9 for Quick Key Codes. Active employees should then enter 1284 and # for a claim form to be sent to a fax machine. Retirees should enter 1088 followed by #; follow the recorded instructions to have a claim form mailed to your home address.

Questions?

If you have questions about the Dental Expense Plan changes, Prescription Drug Plan changes, or using Sandia Line to obtain claim forms, call Benefits on 845-9702 or 845-9704. In California, call (510) 294-2252.

Feedback

Q: Material being sent to Property Reapplication is taking up to four weeks to be picked up. I called about this, and if I understood correctly, there is a team of five people — two of them ES&H representatives — to serve the entire Sandia/New Mexico site.

I understand the requirements of meeting ES&H rules and regulations pertaining to property sent to Reapplication, but it appears that if service is being degraded because of increased demands, management should address the problem. Here are some suggestions:

• Create more teams to handle the increased demand.

• Analyze the current pickup schedule and change it to make it more productive.

• Consolidate material pickup by building, with realistic schedules, so material doesn't sit out in the weather, which decreases its value.

• Create a set of temporary pickup teams — with trained ES&H representatives — to help during peak demand times.

I hope something can be done to improve this valuable service.

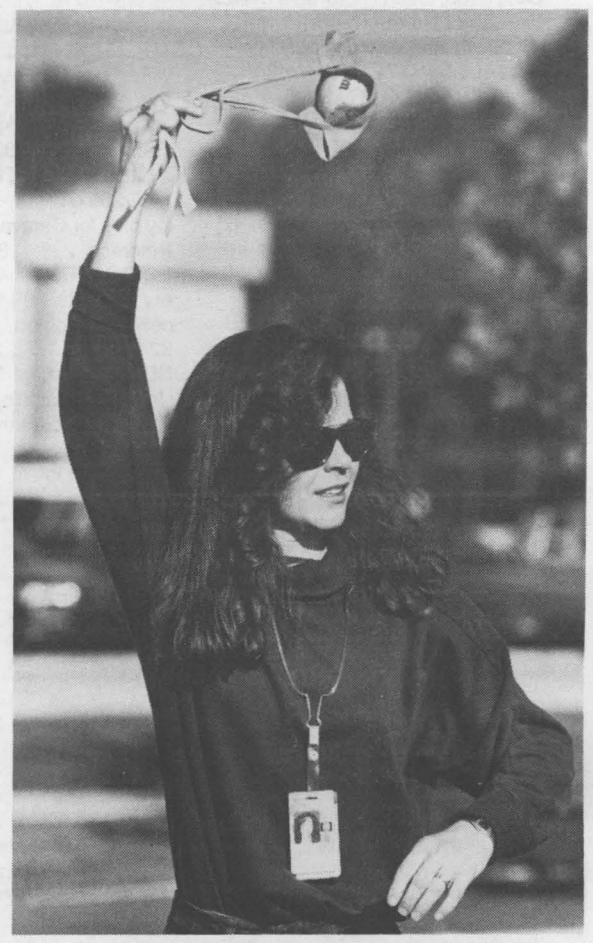
A: Because of Tiger Team findings and ES&H regulations, Property and Materials Services Department 7617's Reapplication Team comprises five members: a truck driver, a forklift operator, a service coordinator, a health physics technician, and a waste management professional.

To improve efficiency, all excess property or material in a building is picked up in a single trip. However, there are circumstances we cannot control, and which may cause delays in pickups. Examples are that the requesting organization doesn't have the required paperwork, or it is not completed properly; the requesting organization has moved to a new location and not informed us; and inclement weather.

On the plus side, however, we now have two teams picking up property. We also have requested modification of our warehouse to include installation of a tritium-counting lab, which should be completed by March, and health physics representatives have reviewed radiation survey procedures and shortened them to give us quicker results.

Finally, we have formed a quality action team to review our pickup schedules in the hope that we can find ways to improve service to all our customers.

Carolyn Lucero (7617)



A NATIVE AMERICAN PERSPECTIVE on simple machines was one of the units Sandia-sponsored School Partnerships used in presentations at local schools this past year. Leslie Rettinger (6449) demonstrates the scientific principles used by Native Americans in developing a sling. Using fun and often exotic examples of scientific principles and equipment, School Partnership presenters hope to motivate elementary-school students to pursue careers in science. The School Partnerships program needs presenters and people to help develop units. Spring offerings include units on properties of energy, volcanoes and minerals, environment and recycling, and robotics. Contact Gary Shepherd (10326) on 845-8078 if you would like to volunteer or obtain more information about the program.