Sandia Visualization Corridor formally opens

Highly complex images rendered in seconds into 20-million-pixels display

By Neal Singer

A 10-foot-high, 13-foot-wide screen that makes high-definition television look in comparison as grainy as an old TV in a cheap motel will be formally unveiled by Sandia on July 12.

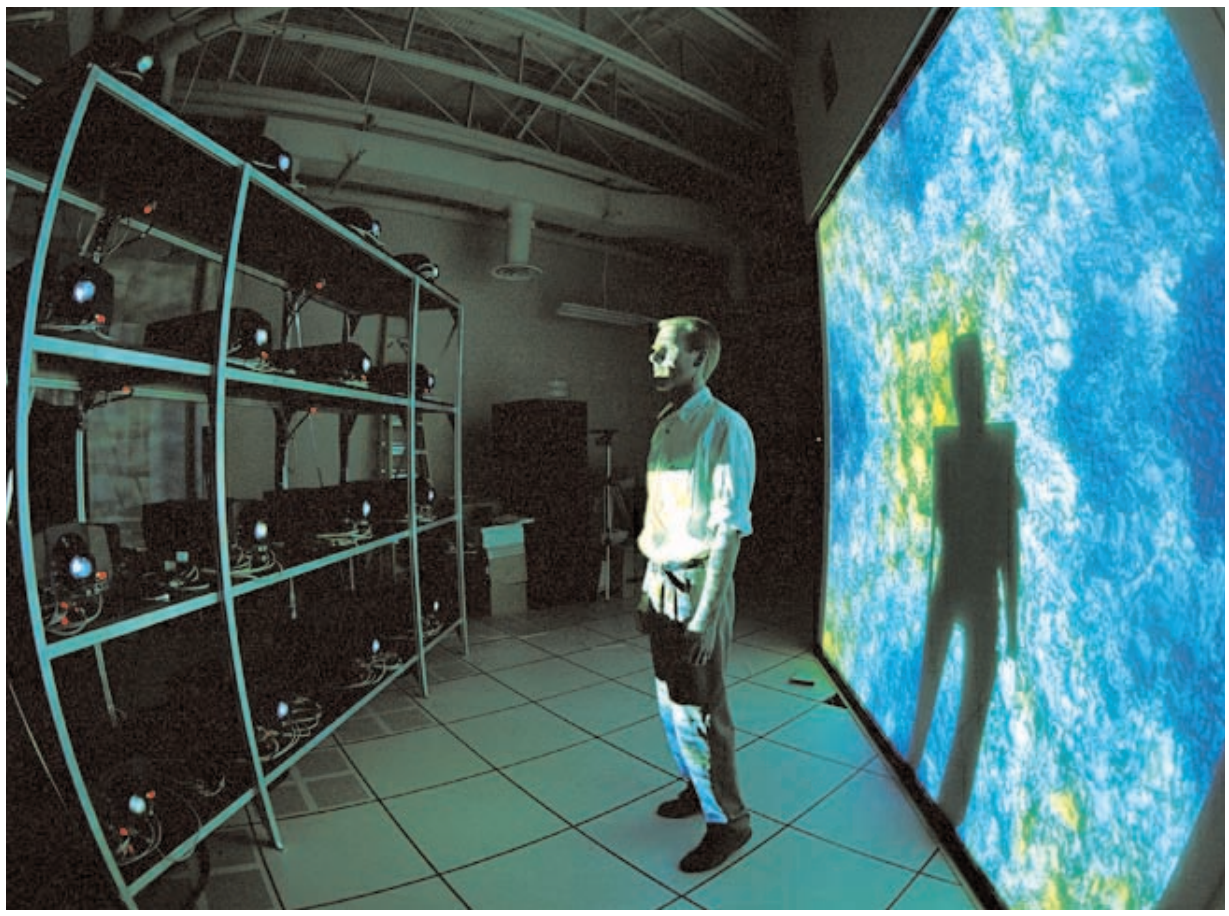
The facility's digitized images of highly complicated scientific data sets are created of 20 million pixels.

Tom Hunter, Senior VP (9000) for Sandia's nuclear weapons program, and Bill Reed, DOE ASCI program director, will cut the tape for the Visualization Corridor's grand opening at an invitation-only reception July 12 from 8-9:30 a.m. in Bldg 880, A1 North corridor. From 10 a.m. to noon, an open house for ASCI personnel is scheduled, and from 1-3 p.m. all Sandians are welcome to visit.

"If the devil is in these details, we'll find him," joked Brian Wylie (9227) of the opportunity for finding formerly hidden mischief through the unusual clarity of the huge data set's visual rendering.

The image is as detailed as if an aircraft at 21,000 feet were imaging every ear of corn in a 100-acre field, says manager and program leader Philip Heermann (9227). "The image approaches the visual acuity of the eye: the eyeball is the limiting factor, not the computer. From ten feet

(Continued on page 5)



MAX HEADROOM? No, even better — it's David Logsted (9519) backstage, checking alignment of 16 digitized projectors that create an image on a 20-million-pixel screen with a clarity that old Max would only look on with envy. (Photo by Randy Montoya)

Labs' RAMPART building management software may be adopted by GSA

RAMPART, Sandia-developed software believed to be the first risk-based approach to building management, may soon become a tool to help the General Services Administration (GSA) assess the risks of natural disasters, crime, and terrorism to the nearly 8,000 federal buildings it manages nationwide. See Chris Burroughs' story on **page 6.**

Sandia LabNews

Vol. 53, No. 14 July 13, 2001

Sandia National Laboratories

Nuclear Energy

Global Nuclear Future would see systemic management of 'all things nuclear'

Sandia VPs articulate vision that integrates deterrence, nonproliferation, energy, and waste

By Bill Murphy

This story is the latest in a series the Lab News *is publishing over the course of the summer to look at Sandia's current work in nuclear power initiatives, what's been done, and what might be in the pipeline in the near and not-so-near future.*

"A new nuclear culture will arise. The question is, 'How much do we [the US] want to influence it?' "

That's the issue and the question as framed by Sandia nuclear energy expert Tom Sanders (6411).

Sandia Senior VP for Nonproliferation Roger Hagengruber (5000), Senior VP for Nuclear Weapons Tom Hunter (9000), and VP for Energy programs Bob Eagan (6000) have an answer. The US, they argue, should seek a seat at the nuclear energy table, a seat it vacated in a *de facto* sense more than 20 years ago.

And the three Sandia leaders have a very good idea of the form this new nuclear culture should assume. They call their vision the Global Nuclear Future. It's a conceptual framework they've developed over the past three years or so to look at nuclear weapons, nuclear energy, nuclear proliferation, deterrence, and nuclear repository management — "all things nuclear," as Bob puts it — as a systemic whole.

The Global Nuclear Future, the VPs say, is not a defined, packaged solution; it's a way of thinking about the shape of things to come. And while the shape may not be sharply defined, its broad outlines can be traced. It's an extension and elaboration of the concept of Global Nuclear Materials Management, championed by Tom Hunter. That was a concept of responsibly managing global weapons-grade nuclear materials in a way that is environmentally sound and profoundly proliferation-resistant.

The Global Nuclear Future vision takes the materials management concept a step further by incorporating a nuclear energy component into the equation. The vision recognizes that nuclear deterrence will be a fact of life for the foreseeable future, but also recognizes that America's Cold War-scale stockpile is far larger than 21st century geopolitics demands. It recognizes that nonproliferation will remain a key national security goal. It sees global climate change as a legitimate area for concern. It sees that nuclear energy can be a component of America's energy supply mix. It holds that nuclear wastes can be minimized and managed through the proper application of technology. And — most critically — it sees all of these issues as synergistically related.

The key to the Global Nuclear Future, says Tom Sanders, is what he calls the holistic nuclear

(Continued on page 4)

Bingaman on alternative energy

Sen. Jeff Bingaman, seen here with Sandia Director Margie Tatro, got a first-hand look last week at Sandia's work in alternative energy technologies. See story on **page 7.**

This & That

Three VPs: ultimate challenge — The *Lab News* staff hopes you are reading and learning from our spring/summer series on nuclear energy. I think you'll find Bill Murphy's page-one article in this series particularly interesting because it puts Sandia's related R&D efforts in a meaningful perspective. It's based largely on interviews Bill did with three Sandia vice presidents — Bob Eagan, Roger Hagengruber, and Tom Hunter. It's about something they call the "Global Nuclear Future." I told Bill he had the ultimate *Lab News* writing challenge — interviewing three VPs and then writing an article that makes sense (I trust no one will tell Bob, Roger, or Tom I said that), but Bill did one fine job.

* * *

Suspicious overseas poet — My media relations/employee communications colleagues and I get some strange phone and e-mail messages. Our names, numbers, and addresses are listed in lots of places; as a result the world's "fruit baskets" have easy access to us. John German, for example, has a year-old-plus news release on the web about a Sandia project that explored the idea of using bees to find land mines. A new woman "pen pal" from the UK discovered John's release and started sending him some "very interesting" e-mail messages, barely related to the release, by the way. Here are a few lines from one of her recent messages:

"To me a smell is yes ... lavender, jasmine, but also rose. How different the very many varieties of rose smell, the smell from the fumes of a car exhaust ... how I hold my breath as I pass by a car reversing out of its drive early on a cold morning. A white freesia has the perfume. I cannot detect a perfume from the coloured ones. Sweet peas, do the different colours have a differing intensity of perfume?" She goes on, rambling about other things that don't smell nearly so great — things we just can't mention in a "family" newspaper.

John says he feels like he's being "stalked by a poet." For his sake, we hope she doesn't have the price of an overseas airline ticket.

* * *

Trust us; we've had ethics training — My goodness! What ever happened to old fashioned trust? I learned that the DOE IG (Inspector General's) office was scheduled to begin a new audit of Sandia this week "to determine whether SNL's self assessments are useful indicators of performance." Now, really, would anyone at Sandia be untruthful on self assessments about our performance? Even exaggerate just a little? How could anyone suggest such a thing? Doesn't the IG realize we have annual ethics training? I'm pretty peeved about this ... so peeved that I'm almost willing to take one of those DOE polygraph tests — *almost.* Maybe DOE could give us all polygraph tests and forego this audit. (They don't ask questions about travel expense reports on polygraph tests, do they?)

* * *

Thanks for your input — I heard from several of you after asking in the last issue for input about unusual business names and who has had the most managers at the Labs, but haven't had time to sort through it all yet. We'll get to these vital matters in the next issue.

— Larry Perrine (845-8511, MS0165, lgperri@sandia.gov)

Alan Swain receives ANS Laurence Pioneering Award

Sandia retiree Alan Swain has received the George C. Laurence Pioneering Award from the American Nuclear Society Nuclear Installations Safety Division. The award is given only occasionally "to recognize outstanding pioneering contributions in nuclear installations safety."

The award, an engraved plaque and a check for $1,000, was presented at the ANS annual meeting in Milwaukee June 20.

Says the letter informing Alan of the award: "The Division is making this award to you in recognition of your pioneering contributions to the advancement of nuclear safety in the field of human reliability analysis and for introducing its application to probabilistic safety assessment of nuclear power plants."

"What the letter does not say," Alan tells the *Lab News*, "is that the human reliability analysis method, models, and technique involved were developed by me at Sandia over many years from 1961 until my retirement as a DMTS in February 1987. Two of my coworkers at Sandia were especially helpful: Henry Guttmann (retired) and Dwight Miller, DMTS [Systems Reliability Dept. 15312]. I am grateful to Sandia for allowing me to develop a method for quantifying the potential impact of human errors in complex man-machine systems.

"My former supervisors (H.E. Walker, W.E. Boyes, J.M. Wiesen, R.R. Prairie, and R.C. Easterling) were unusually supportive. And I am especially grateful to the ANS for recognizing that the method has had useful application in non-weapon areas."

After he retired from Sandia, Alan continued to apply human reliability analysis to US and foreign nuclear power plants, to chemical and other process plants, and in product reliability cases. He and his wife, Allana, who accompanied him to the awards ceremony, live in Rockport, Texas.

Congratulations

To Allison (9821) and Mike Kane, a son, Jared Lee, June 9.

Sandia LabNews

Sandia National Laboratories

http://www.sandia.gov/LabNews

Albuquerque, New Mexico 87185-0165
Livermore, California 94550-0969
Tonopah, Nevada • Nevada Test Site • Amarillo, Texas •
Carlsbad, New Mexico • Washington, D.C.

Sandia National Laboratories is a multiprogram laboratory operated by Sandia Corporation, a subsidiary of Lockheed Martin Corporation and a prime contractor to the US Department of Energy.

Ken Frazier, Editor.....505/844-6210
Bill Murphy, Writer.....505/845-0845
Chris Burroughs, Writer.....505/844-0948
Randy Montoya, Photographer.....505/844-5605
Nancy Garcia, California site contact.....925/294-2932

Contributors: Janet Carpenter (844-7841), John German (844-5199), Neal Singer (845-7078), Larry Perrine (columnist, 845-8511), Howard Kercheval (844-7842), Barry Schrader (925/294-2447), Iris Aboytes (Milepost photos, 844-2282), Rod Geer (844-6601).

Lab News fax 505/844-0645
Classified ads 505/844-7841

Published on alternate Fridays by Media Relations and Communications Dept. 12640, MS 0165

LOCKHEED MARTIN

Labs News wins APEX Grand Award. . . again

The *Lab News*' Jan. 26, 2001, annual Labs Accomplishments issue has won a Grand Award in the APEX (Awards for Publications Excellence) 2001 Awards contest.

Lab News writer Bill Murphy received the award July 3. He coordinates the Labs Accomplishments process each year, from solicitation, collection, and editing of entries (selected by the VPs in each division) to design, layout, and production of the issue.

This year's Labs Accomplishments section was a special illustrated, full-color, 16-page pull-out section featuring Sandia accomplishments in engineering sciences, nuclear weapons, partnerships, materials, pulsed power, arms control and nonproliferation, microelectronics, emerging threats, environmental remediation, computing, manufacturing & production, energy and critical infrastructure, security and force protection, and labs support. (Copies are still available from the *Lab News* office. It is also on the *Lab News* web site at http://www.sandia.gov/LabNews/LN01-26-01/LA2001/la01_story.htm.)

Sandia also won 10 APEX Awards of Excellence. Five went to *Labs News* staff members:

• Chris Burroughs, Education & Information Writing, for her four-page pull-out section on Native Americans at Sandia (Nov. 17, 2000) plus two articles on workplace issues (Jan. 12, 2001).

• Bill Murphy, Benefit & Membership Communications, for his article series on employee work/life balance options (Sept. 6, Oct. 30, and Nov. 3, 2000).

• Randy Montoya, Feature Writing, for his personal photo essay (photos and text) on the impact of Sandia's Shoes for Kids program (Dec. 15, 2000).

• Larry Perrine, Columns & Editorials, for his This & That column of Feb. 9, 2001.

• Ken Frazier, News Writing, for "Galileo's Epic Odyssey Around Jupiter . . . and the Sandia connection" (Feb. 9, 2001).

Four Awards of Excellence were for other Sandia publications also produced by Media and Employee Communications Dept. 12640:

• Bruce Hawkinson, *Sandia Daily News*, for One to Two Person-Produced Newsletters.

• *Sandia Technology*, for Magazine & Journal Writing.

• *Sandia Technology*, for Magazine & Journal Design & Layout.

• *Sandia Annual Report 2000*, for Annual Reports — Printed Four Color.

Chris Miller (12640) coordinates the latter three publications.

Still one more Award of Excellence, in the category Web & Intranet Sites, went to Manny Ontiveros (WebCo Dept. 9517), for Sandia's external web site.

Commmunications Concepts, Inc., Springfield, Va., conducts the annual APEX awards program "recognizing excellence in publications work by professional communicators." There were 5,100 entries this year.

College Cyber Defenders program expands to NM

13 students now in Albuquerque; will travel to California at end of month for Red Teaming, presentations

By Nancy Garcia

The College Cyber Defenders (CCD) program has expanded to New Mexico this summer, with 13 students on board for training in information protection.

In a sense, Zach Lovelady (6516), a University of California at Los Angeles student from Albuquerque, could be considered one of the first candidates for the expanded program, since he began interning at the California program last summer, then spent a week over winter break at Sandia/New Mexico, where he returned after the expansion was launched this summer. The expanded program has 11 undergraduate students from UCLA, MIT, the University of New Mexico, Purdue, the University of Southern California, New Mexico Tech, Rocky Mountain College, and Salish Kootenai College. There are also two high-school students.

At the end of July, the entire group plans to arrive at Sandia/California for a week of presentations and "Red Teaming," in which they will test network vulnerabilities in the student-run computer system (a stand-alone network) and present results from the CCD program. Their full-time mentor, Karen Shanklin (6517) coordinates the program under the management of Bob Hutchinson (6516). Michael Hannah (9338) is a senior mentor, who spends half his time with the students (the last of whom arrived in late June).

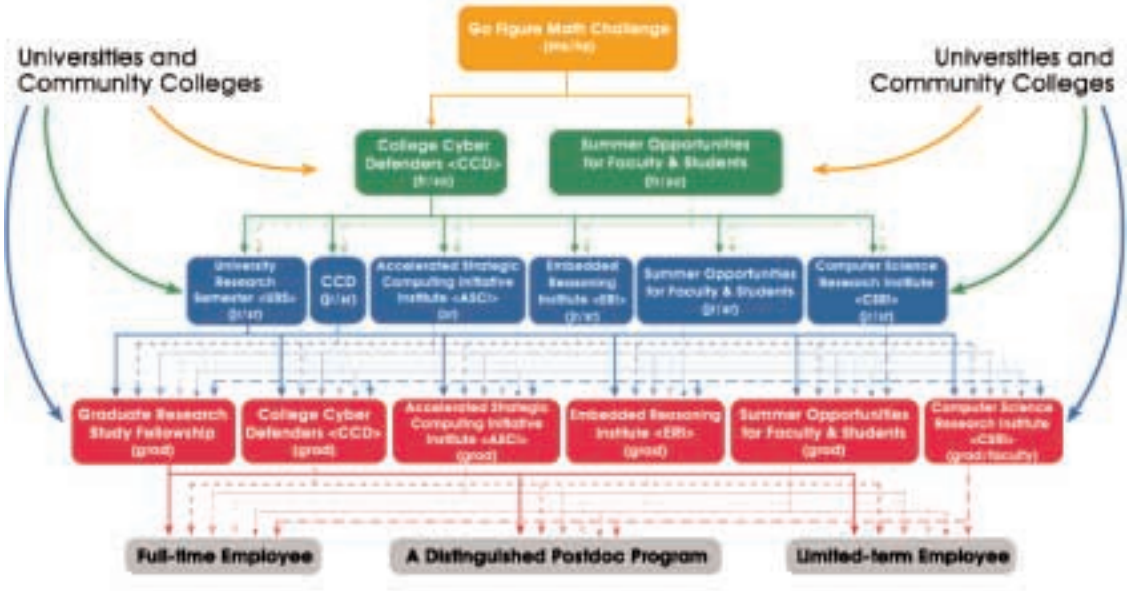
"The intent of the program is to create a pool of potential future employees and to increase computer security awareness," Karen says.

Research projects include a computer security project under Jeff Taylor (9327) and Steve Hurd (8910) to continuously scan for vulnerabilities, working with programming, databases, and prototyping. Projects under David Harris (6516) include an Integrated Network Analysis Tool that consists of a protocol generator, analytical tools, and graphical presentation software. And Bill Young and Brian Van Leeuwen (both 6516) will lead students in exploring the security issues in wireless networking and protocols. Addressing Red Team issues, mentor Dave Duggan (6516) will expose students to the taxonomy of attacks, network intrusion detection, secure systems design, and data mining.

"Each program offers different strengths," said California site CCD mentor Nina Berry (8920), "depending on which mentors are there, and their interests." The programs share the overarching goal of sharing and expanding knowledge in computer security, however, and are designed to develop potential employees.

Started almost three years ago under the guidance of network security expert Fred Cohen (8910), the original program will be "graduating" the first of the original set of interns from four-year colleges within the next 18 months, Nina says.

Computer science/information technology path available to students at Sandia/CA



INTERNS IN THE Computer Science/Information Technology Path can participate in a number of programs at Sandia/California. Programs are available for students aged 16 and up, starting with math students in high school, who can participate in the Go Figure Math Challenge (see top of chart). As students advance in their studies, they are presented with more options to focus on a specific area of interest. Altogether, there are 175 students this summer in a variety of programs that can serve as a path to potential employment. Eighteen students have converted to full-time or limited-term employment.

Sandia CaliforniaNews

Students examine energy costs of computer processing

Committee considers electrical power needs of research network

By Nancy Garcia

CPUs have yet to come packaged with energy-efficiency stickers like refrigerators. Yet anyone whose laptop computer has dimmed an hour into a flight knows the shortfalls of dependence on short-lived power. Now, with California facing higher energy bills, the expense of computing power is also becoming more of a consideration.

At the College Cyber Defenders (CCD) program, an initial study performed to ensure power load-leveling between electrical circuits has been expanded to include energy efficiency. Undertaken by Scott Maruoka and LaVon Dayton (both 8910), who were designated the "Student Power Committee," the study examined electrical consumption of 99 computers and monitors. Their report factored in processing speed and thermal output (which can tax the room's cooling system).

AMPING UP — Scott Maruoka, left, and Chris Kershaw, right, used a custom power meter to measure energy consumption of computers and monitors used by College Cyber Defenders students. (Photo illustration by Lynda Hadley)

Scott, who received his master's in information security in May from Hawaii-Pacific University, enlisted intern Chris Kershaw (8910), who is studying computer engineering at UC Santa Cruz, to help find a power meter customized for their needs. (It has six channels and can provide detailed measurements over time with software Chris is enhancing.) Since computers in the CCD program stay on around the clock, their power consumption was totaled for 24 hours. Monitors are turned off at the end of the workday, so their power consumption was only calculated for an eight-hour period.

Entering students learn to assemble computers, often rebuilding older models available from Reapplication. There were a wide range of computers and monitors in the study — eight different computers and 13 monitor types. The team found quite a difference in cost of ownership, Scott says. Comparing a computer that consumes 0.44 amps (while idling) to one that consumes 0.57 amps wouldn't be expected to show much of a difference. But the second system is more than three times as fast, so the cost-speed ratio was 56 cents per MHz for the slower system, compared to 17 cents per MHz for the faster one. The service life of the computers — three years — was also taken into consideration, since any cost savings is cumulative.

Cost of cooling was also considered.

(Continued on page 6)

Nuclear future

(Continued from page 1)

fuel cycle, which is transparent, totally open for all to see. Using the most sophisticated technologies — many developed at Sandia — nuclear fuels would be tracked and managed throughout their life cycles. The transparency would alleviate proliferation concerns (more on that later), while the holistic nature of the cycle would maximize the benefit from every atom of fissionable material.

As Tom Hunter puts it: "The nation has taken pieces of what should be an integral puzzle and isolated them in a way that we can't get a coherent overall policy." DOE, he says, should "step up to its rightful role and champion this as a major mission element, this integration of all things nuclear."

A look at the nuclear past

To understand the drivers behind Roger, Tom, and Bob's vision for the future, it's useful to understand the nuclear past.

The atom's awesome power, unleashed over Japan, ended a long and bloody war. In the heady postwar days, it was asserted that that same incredible energy would be harnessed and put to work for the greater good of humankind. Thus President Eisenhower's Atoms for Peace. Thus, power "too cheap to meter." A new day, charged with can-do American optimism, would bring light to the far corners of the world.

A bright and shining promise indeed. And a seductive and alluring one, too. In the US alone, more than 100 nuclear power plants were brought on line.

But the electricity wasn't too cheap to meter. It cost dearly to bring a power plant on stream. Huge amounts of capital (which had itself become very costly by the 1970s) could be tied up for years as utilities negotiated the regulatory/environmental labyrinth required to get a plant up and running. Environmental concerns mounted: What do you do with the wastes? Safety concerns mounted: Would a "China Syndrome" core meltdown let slip an Armageddon of destruction? While the damage from Three Mile Island might have been exaggerated in the public mind, there was no doubt whatsoever that Chernobyl was a disaster of huge proportions. Public support went south and stayed there.

Then there was the public policy issue.

A technology called fuel reprocessing allowed engineers to take advantage of an interesting characteristic of controlled nuclear fission. After being "burned" in a reactor, the used uranium fuel rods could be reprocessed — that is, recycled — and more fissionable material could be recovered. In the right kind of reactor, that fuel could be used to generate more electricity. Along with reprocessing technology, there was also another technology, the breeder reactor. It was the nearest thing you can imagine to a perpetual motion machine. The breeder reactor could actually produce — via irradiation — more fuel than it consumed.

These were exciting technologies, to be sure. But in the 1970s, reprocessing wasn't cost-effective. Far from it. It was expensive. Even so, the prospect of virtually unlimited fuel supply still tantalized, and it might have made sense for US industry to invest in R&D to develop and refine reprocessing techniques and breeder reactor designs.

Except for one big concern: All this reprocessing and fuel breeding would result in tons of new weapons-grade nuclear material. Very dangerous stuff could be diverted down some very unsavory avenues. An adversary using the technology could churn out bomb-grade fissionables by the cart-load. Sell it to the highest bidder. Imagine Idi Amin with a couple of nukes.

The dream, in short, had a nightmarish dark side. Jekyll and Hyde. So, in the interest of national security and nonproliferation, President Carter signed a directive: There would be no reprocessing, no breeders, in the US.

Anything but nuclear

The bottom line to all these political, economic, regulatory, environmental, safety, and public relations concerns? Utility company bean counters, the no-nonsense cost/benefit guys and gals, said to their bosses: "We can make a lot more money with natural gas (or coal, or whatever. Anything but nuclear)."

Nuclear investment dried up, and with it so did US influence over all (non-weapons) things nuclear.

The rest of the world didn't follow the US lead. Indeed, nuclear plant construction is surging around the globe — 31 commercial reactors are under construction right now and scores more are anticipated in the years ahead — and several countries are reprocessing fuels.

Roger poses the question: Has the nation's reprocessing policy produced the desired benefit, or would an alternative policy be more beneficial in controlling proliferation?

"The argument we're making," he says, "is that an alternative policy about nuclear energy and reprocessing would be more beneficial. The additional element of the energy problem that the US is facing only adds greater urgency."

He adds: "Our whole thesis here at Sandia is that the answer to a world in which it's possible to have the largest degree of nuclear peace and, to some extent, prosperity is a world in which you have to engage all elements, including a proactive policy for nuclear energy." A big part of that policy, Roger says, is that "we need to fully engage Russia in this."

Tom agrees: "I don't think you can think about a Global Nuclear Future without recognizing the Russian situation; they are still advocates for a broad spectrum of nuclear activities, including nuclear power. They certainly have the capability [to promote things nuclear], the experience to do that, and they are, of course, a major weapons state. It's clear that we need to have some cooperation with them in a way that they are at least significant contributors to how this nuclear future shapes up."

As an aside, Bob says, "It's kind of interesting that in Russia plutonium is viewed as an extremely valuable national asset. In this country it's viewed as intolerably bad stuff that should be thrown away. We actually think the Russians have it right here."

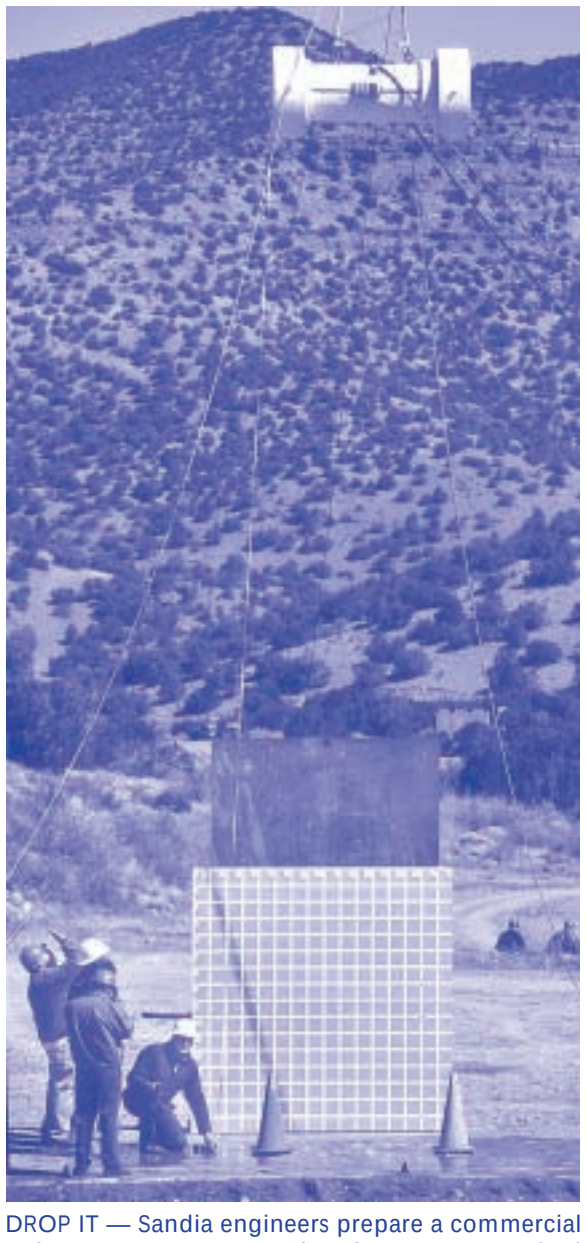
The global dimension

As interested as he is in Russian-specific interactions, Roger sees the global dimension of the Global Nuclear Future.

"We have to recognize," he says, "that many emerging economies — China and India, for instance — are going to have very substantial needs for energy. They face the problem that the world faces, which is that coal is relatively abundant but it produces a lot of carbon and a lot of pollution. Nuclear energy will be attractive for them. We can't simply walk away from this. We're going to have to face this issue whether it's a brownout in California, a global issue of pollution, or proliferation. Sitting back is not going to be good enough."

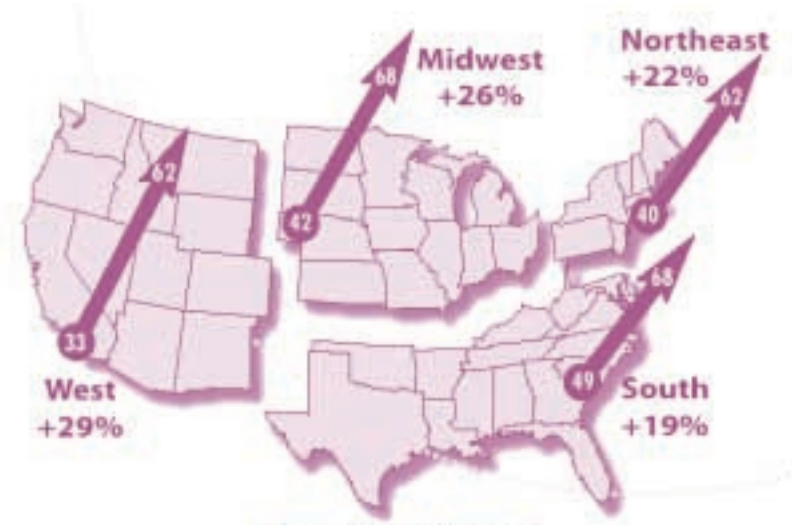
Bob notes that the energy crisis that reared its head in California early this year "has teed up the issue of nuclear energy again in a major away. It's caused a lot of people to look at why the US

(Continued on next page)



DROP IT — Sandia engineers prepare a commercial rad-waste transport container for an NRC-required drop test prior to certification. Safe transport of nuclear wastes is one of the many integrated aspects of the Global Nuclear Future as envisioned by Sandia VPs Roger Hagengruber, Tom Hunter, and Bob Eagan. (Photo by Randy Montoya)

American public sees a global nuclear future, too



Percent Who Agree:
"We should definitely build more nuclear energy plants in the future"

	Oct. 1999 %	Jan. 2001 %	Mar. 2001 %	Change %
All U.S.	42	51	66	+24
West	33	52	62	+29
Midwest	42	53	68	+26
Northeast	40	49	62	+22
South	49	52	68	+19

ALTHOUGH by definition polling data are as volatile as public opinion, this April 2001 poll conducted for the Nuclear Energy Institute reflects growing public support for increased nuclear power in the US. Other polls reported in the nation's media over the last three months reflect similar results. (Chart courtesy of Nuclear Energy Institute)

Visualization

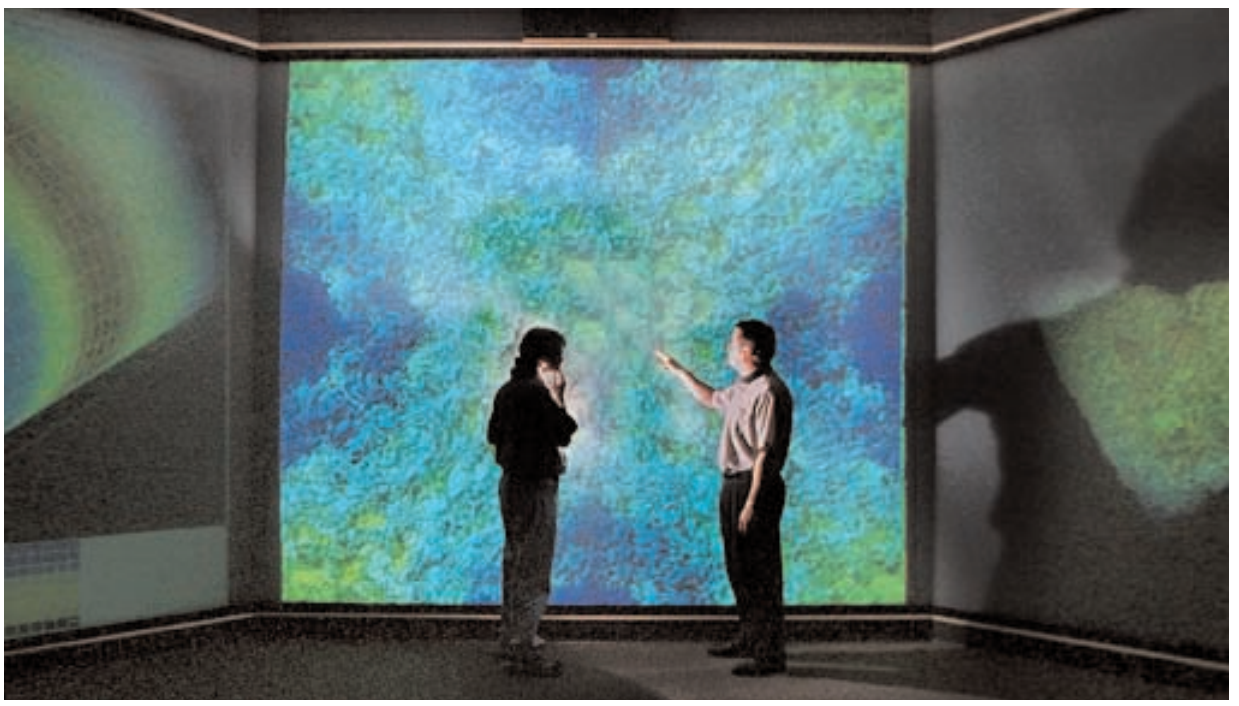
(Continued from page 1)

away, the image is as good as your eyes are able to see."

Also, even the world's largest sets are rendered in seconds rather than minutes or hours.

"We are 100 times faster in producing an image than the fastest SGI graphics pipe," says Philip, "and to my knowledge are now the fastest in the world in rendering complex scientific data sets." (SGI is generally acknowledged as an industry leader in graphics performance.) The "Scalable Rendering Team" that created the cluster includes, among others, Milt Clauser, Ken Moreland, Dino Pavlakos, and Brian Wylie (all 9227).

The screen is part of Sandia's Visualization Corridor — so-called because "it suggests a wide path through which large quantities of data can flow," says project manager Carl Leishman (14111). Images are created through massively parallel imaging, which could be thought of as the kid brother of massively parallel computing. The image is not created from a single graphics card but instead through the orchestrated outputs of 64 computers splitting data into 16 screens arranged as a 4 x 4 set.



WAR ROOM OF THE ENTERPRISE? That's not Kirk and Spock looking at a wormhole, but Ken Moreland, left, and Brian Wylie (both 9227) examining a complicated data set displayed with a clarity unmatched by the HDTV images on either side. (Photo by Randy Montoya)

Next stop: 64 million pixels

By January, Philip expects the Sandia team to reach the project's second phase goal of 64 million pixels — a major milestone of the ASCI VIEWS program, which funds this work. "Sandia is the Lab charged with responsibility for this milestone, and we will meet it," he says. The images are expected to allow scientists a better view of where nuclear and other complex reactions are behaving unexpectedly and where they are proceeding normally. Says Philip, "It does not make sense to view a 20- or 100-million cell simulation result on a standard one-million-pixel display."

The ASCI/VIEWS Visualization Corridor was conceived and built by Sandia's VIEWS Visualization and VIEWS Operational Deployment team to support development and deployment of scalable rendering and display technologies. The 2,500-square-foot facility in Bldg. 880 is deliberately located close to many of its potential users, including the weapon analysts in that building. The technology developed in the Visualization Corridor is expected to reach another peak within the walls of Sandia's MESA Complex in 2006, where weapon engineers will work in close proximity with weapon analysts, engineering scientists, and microtechnology developers.

The current facility features three wall-sized rear-projection display screens, custom-constructed by Stewart Filmscreen Corp., of Torrance, Calif. The display screens — each 10' x 13' — may be the largest individual pieces of glass in New Mexico. The screens were installed through an open wall during remodeling of the building, and if they are ever removed or replaced, an access port in the roof will allow the screens to be lifted in or out with a crane.

Arrays of high-performance digital projectors (1280 x 1024 pixel resolution) provide the screen images. The initial installation consists of one center-screen stack of 16 digital high-resolution projectors, with individual projectors for the left and right screens. The system is configured with no image-edge overlaps. Because of the brightness of the projectors, the extremely high-resolution images are easily discernible in ambient light conditions, and users can work in the environment with their books, papers, computers, and other devices and interact normally with one another.

Down on the "render farm"

Driving the images will be one of the first computer clusters designed for graphics rendering and image display. Building on Sandia's expertise in scalable high-performance computing, the VIEWS team has fielded a cluster of 64 Compaq SP750 workstation computers. Although the computers are similar to home computers, they are interconnected with a very high bandwidth, gigabit wire speed, communications fabric. Software created by Sandia's VIEWS scalable rendering team leverages the data interconnect to perform scalable parallel rendering of computer simulation data into images. Clusters of computers, or "render farms," used for many years in the movie industry, may take a half-hour or more to render a frame — the equivalent of the Sandia screen — but they cannot handle the data set sizes or the interactive rates of the Sandia cluster.

Plans exist to move the 64-node computer cluster into the classified environment and to assemble a new unclassified computer cluster.

Other, smaller view-clusters exist at Princeton, Stanford, and Lawrence Livermore National Laboratory. These programs, as well as another to be operable this winter at the University of Texas at Austin, are all funded by ASCI.

The Corridor provides many other classified and unclassified data sources for display: workstations, video teleconferencing, media creation support for animation files, and VHS and DVD. Automated video and audio matrix-switching support both unclassified and classified sources, and a variety of display modes are available. The user facility is available on a 24-hour basis.

Budget permitting, even higher resolution on the way

Depending on budget and the availability of technology, 16 additional projectors with even higher resolution (1600 x 1200 pixel resolution) will eventually be installed along with another array of 16 more 1280 x 1024 projectors for a total of three projector arrays with an overall display resolution of 69 megapixels. This capability will support the VIEWS FY02 Milestone — Scalable Rendering System to drive a 64-megapixel display. This is a technically aggressive goal, but the result for users will be very large, very bright, and very detailed computer display images.

Nuclear future

(Continued from preceding page)

chose not to continue building nuclear power plants. A lot of folks are concluding that the reasons for doing that were mostly poorly founded."

Thus, Bob says, the time is right for America to revisit nuclear energy, but with a new expanded sense of what that means.

"Sandia is about national security writ large: security related to our main mission of weapons, security related to proliferation, security related to the energy supply, and security related to environmental policy. . . . Within the DOE and within the government in general these things are handled as separate entities, but the reality is that they're all interrelated and we've put together a story around how all those things are related. And our role is, then, to try to stimulate dialogue at the right levels of government to start to manage all things nuclear in an integrated fashion."

Roger, Tom, and Bob stress that only the government can really provide the policy and R&D underpinnings of the Global Nuclear Future.

> *"I think that right now and for the next few years we have an absolutely fantastic opportunity to move all this forward."*

Says Roger: "Our philosophical view is that . . . the genetic code of nuclear energy has a substantial part of its sequence coming from government investment. . . . Our belief is that the government needs to lead the way in the technology area toward a new generation of nuclear energy, not to the exclusive benefit of the US but in a global way."

Timing is right

And the timing is right, says Bob, for the government to step to the plate.

"I think that in this administration, the [Global Nuclear Future] concept is extremely viable. We certainly have an opportunity to get this played within the Department of Energy, because of [Labs President] Paul Robinson's leadership position in all things nuclear and his ability to have a dialogue with the Secretary. . . . I think that right now and for the next few years we have an absolutely fantastic opportunity to move all this forward. We have a president who's not afraid to utter the word nuclear and a vice president who is outspoken on the issue and has expressed support for very pragmatic approaches to solving these sets of problems. Given those factors, I think, yes, there's a very high chance we'll get a favorable hearing on the [Global Nuclear Future] concept. . . . Even the strong environmental community has got to look at this issue of balance of greenhouse gas emissions with the issue of nuclear reactors."

The timing may be right, but there are challenges: "The problem is that, with things of this nature, broad in scope like this [Global Nuclear Future] concept, it's hard to capture the attention of policy makers," says Tom. "I think we [Sandia] should be seen as those who want to engage in the dialogue, support the policy makers, try to provide information that is factual, objective, ethical, and presented with integrity."

Sandia to release first risk-based approach to building management software for use by GSA

RAMPART assesses risks of natural disasters, crime, terrorism

By Chris Burroughs

RAMPART, Sandia-developed software believed to be the first risk-based approach to building management, may soon become a tool to help the General Services Administration (GSA) assess the risks of natural disasters, crime, and terrorism to the nearly 8,000 federal buildings it manages nationwide.

GSA turned to Sandia in mid-1998 following the Oklahoma City bombing and several devastating natural disasters to create a screening-level software program that could analyze the risk of potential threats to buildings. After nearly three years of development, RAMPART, for Risk Assessment Method — Property Analysis and Ranking Tool, is ready to be rolled out.

"Traditionally buildings have been built to code, which pays attention to disasters that have already happened," says Regina Hunter (6804), RAMPART technical lead. "RAMPART looks to the future probability of events occurring and what there is to lose if those events take place."

The software development is part of Sandia's Architectural Surety® program, which uses technology to make homes, shopping malls, offices, public buildings, and infrastructures safer in a natural disaster or terrorist attack.

While the initial RAMPART software was developed specifically to analyze risks for GSA-managed buildings, it could easily be adopted for other critical facilities such as embassies, school systems, and large municipalities.

"We think RAMPART could have wide application for other government agencies and in the private sector," says Rudy Matalucci (5862), the RAMPART project manager.

On the road

Starting this month the RAMPART team will be taking the software on the road, giving formal training sessions on it at the ten GSA regional offices. The first was July 10 in Denver, to be followed later in the month with a session in Fort Worth. Training at the remaining regional offices is planned through the end of September.

In developing RAMPART, the Sandia team built equations for threatening events — natural hazards including hurricanes, tornadoes, earthquakes, winter storms, and floods as well as crime and terrorism — and information on the building's location, construction type, numbers of people housed, types of activities underway, and numerous other factors. The equations could then determine the risk for an event at a particular building.

For example, Regina says, take an empty warehouse slated for demolition in an area highly prone to hurricanes. While the potential for a hurricane is large, the consequences are unimportant, and therefore risk turns out to be very low."

However, if it were a large federal building that housed thousands of people, including several hundred from "lightning rod" agencies like the Federal Bureau of Investigation or the Bureau of Alcohol, Tobacco, and Firearms, and was in the same hurricane-prone location, the risk would be much higher, she says.

RAMPART consists of a user interface, a threatening-events database, and an expert system of rules that embody the GSA's knowledge about buildings and tenants and Sandia's knowledge of risk analysis. Using the software, it will take a GSA staff member less than two hours to complete a building risk analysis.

Easy to use

One of the important aspects of RAMPART is that it is easy to use for the GSA staffers.

"All users have to do is point and click their way through the assessment," Regina says. "They will be asked basic questions about the building — location, construction, security monitoring, etc. — and the computer program will do the rest."

"The interface does not request any information that a GSA property manager can't reasonably be expected to have access to," Regina says. "For example, the user is not asked to evaluate risk or to provide data on the probability of natural hazards in the area." Instead, RAMPART contains this information in its database.

After completing a building assessment, users learn whether the building is considered to be a very high, high, medium, low, or negligible risk. They receive additional information about the risk factors in the form of a bar chart that shows the risk for the consequences analyzed for each hazard. The graphical presentation allows the user to see and distinguish at a glance both the infrequent high risks and the frequent low risks that the building presents.

From the start and at each stage of the RAMPART project, Sandia developers made sure that GSA regional offices were involved in the software creation. Regina met with five of the ten regional offices at least once and with the field office in Albuquerque three or four times to query them on their needs and obtain input on the software as it was developed.

"I loved this project so much that I've visited regional offices on my vacation," Regina says. "I thought it was important to find out what the regional offices thought about the software. Their responses led me to change the software in my attempt to make it a real tool for GSA."

"Standard software development practices dictate that analysis and design of an application be done in the very early stages of a project," says Sharon Shannon (6804), one of the team's programmers. "For RAMPART, however, no one knew in the beginning how to do risk assessment for buildings, and interaction between Sandia's team of risk analysts and GSA property managers is an ongoing effort."

Conferring with people in the field offices, for example, helped Regina get a better handle on what consequences to include. Ultimately death, injury, loss of mission capability, loss of property, loss of content, loss of use of property, and first responder risk were listed.

Software changes

One example of how she changed the software to meet the GSA needs was the first-responder aspect. First responder means the first unit, like a fire department, responding to an incident. The software initially asked a question about how long it would take for a first responder to arrive at the building, with options listed between five and 20 minutes. After noticing that some folks at the Auburn, Wash., regional office were perplexed over the question, she asked them what the problem was.

"I learned that in some of the remote buildings in Alaska it might take days to get a first responder, which basically means no response," she says. "So we changed the software to include an answer of 'none.'"

Regina says RAMPART will continue to change as the GSA regional offices begin using the software after the road show. She anticipates the regional offices will help work out the bugs to improve the software.

"Traditionally, buildings have been built to code, which pays attention to disasters that have already happened. RAMPART looks to the future probability of events occurring and what there is to lose if those events take place."

"All users have to do is point and click their way through the assessment. They will be asked basic questions about the building — location, construction, security monitoring, etc. — and the computer program will do the rest."

RAMPART team

The RAMPART software team includes Rudy Matalucci (5862) as program manager, Regina Hunter as technical lead, Debra Browitt (6536), Sharon Shannon (6804), Len Malczynski (6002), Doug Rizor (6135), Phil Pohl (6804), and Brent Melville (6804). Deborah Kernan (5931) and Abram Van Der Geest (1673) worked on the project in earlier stages.

Energy costs

(Continued from page 3)

Although many students have received 17-inch Apple monitors from Reapplication, the study showed those bright cathode-ray displays create a lot of heat, compared to less bulky and more legible flat-panel displays.

"In the summer, the outdoor temperature goes to triple digits," Scott says. "We've gone from 15 people in the building in the spring to 34 people this summer. . . . People are like 2,000-watt heaters — that's almost 600 British Thermal Units — so the heat load from equipment and people makes the cost of air-conditioning a factor."

The interns didn't want to trip a circuit breaker by overloading electrical equipment. "We realized there would be a whole lot more interns here in the summer," adds LaVon (a student at Hayward State University), "and we started thinking about rolling blackouts. We wanted to get a diagnostic of how much energy we were pulling in this room, and looked at cost efficiency. That way, you could purchase a box that could save you money in the long run."

Taking cooling and all the energy considerations into account, Scott says, "we're trying to get more processing power for the money.

The data are now available on the web at http://heat.ca.sandia.gov, and the portable power meter can also be provided for others at Sandia who want to measure equipment energy consumption.

Scott thinks lessons from energy problems in California can help the rest of the country, too. "Our future depends on being high-tech, which generally means high power consumption," he says, "and we just don't have the infrastructure. Initial results show that something like one-third of the power used by computers can be saved by making better buying decisions, and you save money along the way."

Sen. Bingaman hears first-hand how Sandia researchers are tapping into renewable energy's potential

By Bill Murphy

Sen. Jeff Bingaman, D-N.M., in his first visit to Sandia since becoming chairman of the Senate Energy and Natural Resources Committee, heard briefings last week from Sandians about the Labs' work in alternative energy technologies. Presentations focused on concentrating solar power, direct solar water heating, photovoltaics, wind energy, and geothermal energy.

Bingaman was on a fact-finding mission to the Labs as his committee gears up for additional debate this summer about provisions of his Comprehensive and Balanced Energy Policy Act of 2001.

CRAIG TYNER discusses concentrating solar energy opportunities with Sen. Jeff Bingaman during the senator's July 6 visit to Sandia's solar tower. (Photos by Randy Montoya)

The act calls for renewable energy R&D spending of $419 million in FY02, increasing to $652 million by FY06. The bill also includes provisions with incentives for renewable energy investment, including a requirement that the federal government purchase a certain percentage of its electricity from renewable energy sources.

PAUL KLIMAS describes a next-generation solar water heater to the senator.

Bingaman told news reporters after the July 6 briefings that he considers the administration's budget plan proposal to substantially cut renewable R&D funding "totally wrong-headed." (In a news release distributed during the briefing, Bingaman cited Bush budget numbers calling for a 54 percent reduction in federal solar energy spending and a 48 percent cut in wind energy spending.)

"The president has retracted a lot of that," he said. "It was clear [to the President] that Congress wants to keep funding at least at the level it's at now." The Bush administration has subsequently indicated a willingness to support legislation that would keep renewable R&D investment at its current levels, he said.

In his news release, Bingaman said, "Sandia scientists have done groundbreaking research on renewable energy sources such as wind and solar power. There is no question in my mind that this technology will play a key role in helping meet our national energy needs."

Concentrating solar energy

In context-setting remarks for Bingaman, Margie Tatro, Director of Sandia's Energy and Transportation Security Center 6200, noted that renewable energy sources represent a growing segment of the nation's energy portfolio. The cost of renewables — a traditional stumbling block to wider implementation — has been coming down over the years and is now competitive with non-renewables in some applications. Also, she said, renewable resources are abundant in the US, particularly in the Southwest, where sun and wind are defining environmental characteristics.

Craig Tyner, Manager of Solar Thermal Technology Dept. 6216, briefed Bingaman on concentrating solar energy. Among the key benefits: the adaptability of thermal solar power. Because the technology involves heating a fluid that then is used to produce steam to turn a turbine, it can be hybridized — other energy sources can be used with the systems during darkness or excessive cloud cover. The potential of the technology has been shown on a large scale with Solar Two, a demonstration solar thermal power tower located in the Mojave Desert in California. Solar Two can generate about 10 megawatts of electricity.

BETH RICHARDS describes the "very elegant" solar photovoltaic technologies to Bingaman.

Hot water from the sun

Paul Klimas, Manager of Photovoltaic System Components Dept. 6219, described for Bingaman a CRADA project between Sandia and the Salt River Project (SRP), a large public-private utility company in Arizona, to develop a commercially viable solar hot water heater. Paul said SRP came to Sandia for help because "we know solar and we know engineering. . . they wanted our systems expertise." SRP, he said, had an idea of what it wanted in a solar water heater: It would last for 30 years; it would be designed to be built as part of a home's roof during construction so that it could be factored into the first mortgage; it would cost no more than $1,500 installed. Sandia came through, developing a system that meets SRP's requirements. That system is in testing in Maricopa County and could be deployed commercially in the next two years. SRP estimates the market for the heaters to be in excess of 20,000 units a year in the Phoenix area alone, saving substantial amounts of energy.

Elegant photovoltaics

Beth Richards of Photovoltaic Systems R&D Dept. 6218, described the "very elegant" technology of photovoltaics. Unlike concentrating solar energy technologies, which use the sun's heat, PV technologies convert photons directly into electricity. The technology first found wide application in stand-alone systems — lights for highway signs in remote locations, electricity systems for remote homesites such as those you might find on the Navajo Nation. Now, however, PV systems are more and more being tied into the energy grid and are, in fact, well-suited to a 21st century distributed energy model. Though much of the breakthrough R&D has been conducted in the US by DOE labs, PV systems are being adopted in other nations.

HENRY DODD discusses wind energy technologies with an inquisitive Bingaman.

"We don't want this to go the way of the VCR," Beth said (a reference to the fact that although videotape recorder technologies originated in the US, the huge world market for video appliances was dominated by foreign firms).

Margie said PV technologies — indeed, all renewable technologies — have a natural R&D fit with improved storage technologies, some method to store energy when the wind doesn't blow or the sun doesn't shine.

Geothermal bits

John Finger of Geothermal Research Dept. 6211 noted that while geothermal energy has the advantage of being utterly reliable, it has the disadvantage of being difficult to tap into. Unlike drilling for fossil fuels, geothermal drilling requires boring though hard, tough rock, in a hot environment that might even involve corrosive gases.

"For geothermal work, we need tougher tools," he said. And Sandia has done a lot of work in that area. He showed Bingaman an old-fashioned well-drilling bit based on geared roller cones that grind up the rock. The drill bit was developed in 1911 by Howard Hughes Sr. and is a very mature technology, without room for revolutionary improvement. Sandia developed an alternative drill bit, the polycrystalline diamond compact (PDC) bit, which cuts through rock the way a machine tool cuts through metal. That technology has been embraced by the drilling industry. John also showed the senator a new downhole probe that monitors drilling progress and withstands heat much more efficiently than conventional probes. Like the advanced PDC bit, the downhole probe helps to substantially boost drilling speeds.

JOHN FINGER briefs the senator on state-of-the-art geothermal drilling tools.

Harnessing the wind

Installation of wind generating capacity worldwide over the last two years has totaled 20,000 megawatts, said Wind Energy Technology Dept. 6214 Manager Henry Dodd. That's more new installed electrical generating capacity than nuclear power in the same period. And interest in the technology is increasing as costs become more competitive. Henry described for Bingaman what he called "the big 12," the dozen states — including New Mexico — where winds blow strong enough and reliably enough to be a very viable energy source. He described Sandia's work with industry to improve wind vane performance to derive the maximum energy from even modest but steady winds. He noted that for New Mexico, electricity generated by the wind could become a valuable export item.

Following the briefings, Bingaman said he thinks he can rally bipartisan support for "a balanced piece of legislation" that includes solid federal investment in renewable energy R&D.

"I think there are things we can do [to encourage renewable development] through legislation," he said.

NNSA's Gordon calls for reinvigorating advanced warhead design activities at the weapons labs

National Nuclear Security Administration head John Gordon has told a House subcommittee that he wants to "reinvigorate advanced warhead concept design activities at the three nuclear labs and at headquarters."


JOHN GORDON

He emphasized that he was not proposing to develop new weapons in the absence of a Department of Defense requirement. But he said design capabilities at the labs are not being exercised, "and I believe this capability is atrophying rapidly."

He also said NNSA is conducting an internal review on "how we can improve significantly our readiness posture to conduct a nuclear test, should we ever be so directed." Here too he emphasized the contingency nature of the planning.

"This is not a proposal to conduct a test, but I am not comfortable with not being able to conduct a test within three years. Clearly any change would require full consultation with Congress."

He also said NNSA has begun looking seriously at what it would take to construct a new pit production facility at Los Alamos National Laboratory.

Gordon's comments came during his oral testimony to the Subcommittee on Military Procurement of the House Armed Services Committee on June 27.

He said these were the three topics he wants to focus on this year that are not likely to have large, immediate budget implications.

As for budget matters, he noted that the administration's requested budget of $5.3 billion for the Defense Programs' Stockpile Stewardship Program, an increase of 4.6 percent over last year, "is a significant amount of money and is, I believe, the only real increase proposed in the DOE budget." He said it will support "most of our major campaigns" that are the technology building blocks for stockpile stewardship.

He said the requested budget level will handle the ongoing work on the W87 warhead. Also, he said, "We will begin the much-needed refurbishing, as has been planned with the NWC, on the B61 bomb with a first production unit off the line in 2004/2005.

"We would, under current allocations, however, have to defer the W76 and W80 refurbishments, even though we have agreed schedules for these systems with the Department of Defense.

"At the requested level, we would not aggressively be able to attack the infrastructure crisis. . . Many of our facilities are falling down around us; some are not safe; some will not support needed operations; many affect recruitment and retention."

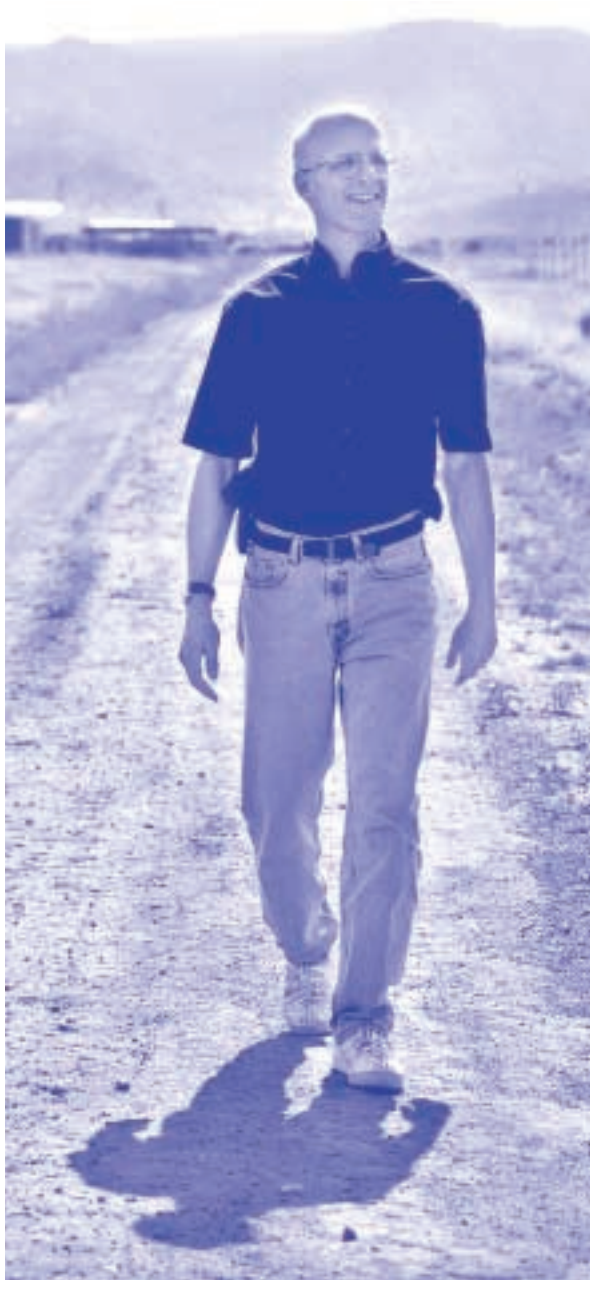
Gordon opened his testimony by saying steady progress is being made toward building the kind of efficient and effective organization that had been envisioned when NNSA was created to manage the national nuclear security enterprise.

He said the first year was plagued by mission problems, especially low morale at the labs, production plants, and other facilities. Morale, he said, "really was the biggest problem facing us in an almost desperate situation. We haven't entirely turned it around, but we have stopped the fall of morale," he said.

"People are now turning to real work. There is a clear mission ahead of us — a sense of future."

"People are now turning to real work. There is a clear mission ahead of us — a sense of future. There's a different feel at each of the organizations. We're not on the front page!"

Memorial service held for Scott Schrader


LONG WALK ENDS — Scott Schrader at the southern border of Area 3 in a photo taken last August. (Photo by Randy Montoya)

A memorial service was held for Sandia engineer Scott Schrader (6134) on Saturday, June 30, at the Ridgecrest Christian Church in Albuquerque. He died June 26 after a four-year battle with cancer.

Approximately 200 people attended the service, which opened with slides projected above the pulpit of Scott as a child with his family. He is standing by his red wagon, playing music with a coffee can for a drum, baling hay, sitting on the back of a pick-up truck.

Then he is a young man skiing, biking, and grinning at the camera, bulked up from weightlifting, the picture of health.

And then he is in his late thirties, on his knees playing with his own children, his hair thinned from radiation treatments and chemotherapy.

And finally, the image that overhung the remainder of the service — Scott walking along a dirt road on the southern border of Area 3, so thin he seems almost weightless. His shadow is before him. But sunlight reflects from his bare head, a watchband efficiently hugs his right wrist, his marriage ring glints on his left hand, and he is smiling.

A man known for helping others, he maintained that character throughout his illness. According to Ron Price (6850), who visited Scott in the hospital to comfort him after reading an earlier *Lab News* article (Aug. 11, 2000) on Scott's trials, "He gave me the peace and assurance I was trying to give him."

The service ended with a reading of letters written by Scott to his children, Troy, 6, and Emily, 4. Scott described his love for each child and the joy he felt in the short time he had to raise them. He thought that being their dad was better than anything else he had ever done in his life. He wrote,"I feel like I'm leaving the best job I've ever had."

Scott was 40 years old. — *Neal Singer*

Employee death

Linda Hanson, of Warehouse Services Team 7863-1, died June 27 after a long illness.

She was 58 years old.

Linda provided administrative support and had been at the Labs since 1991.

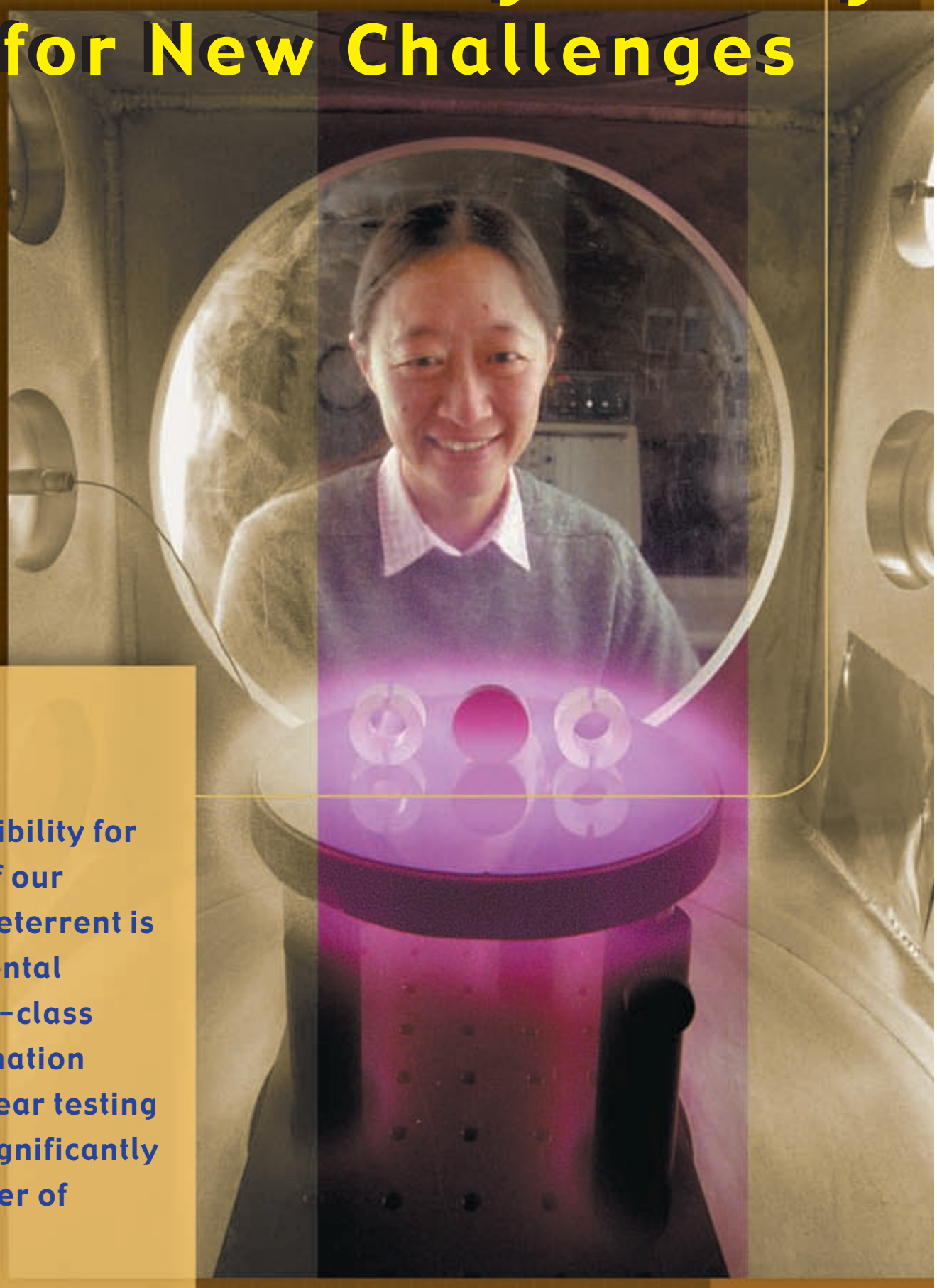
She is survived by her children Michael Hanson, Mark Hanson, and Mindy Lowe.


LINDA HANSON

Retiree deaths

Frank P. Hudson (age 79)	Dec. 25
Vivian D. Messersmith (86)	Jan. 30
Elden M. Vanvickle (81)	Feb. 9
Donald Barack (80)	Feb. 14
Elwood A. O'Brion (83)	Feb. 27
Otto H. Schreiber (69)	March 6
Richard N. Carpenter (76)	March 14
Kenneth H. Williams (82)	March 15
Carl E. Drew (86)	March 19
C. S. Sandoval (83)	March 23
Russell D. Freyermuth (84)	March 23
Ralph P. Campbell (80)	March 23
Dale L. Fastle (79)	March 24
Jennie L. Scales (74)	March 26
Charles R. Mills (77)	March 30
Gerald E. Ward (55)	April 5
R. J. Hart (73)	April 7
John W. Cooper (86)	April 9
William A. Walton (85)	April 10
Floyd A. Kunz (88)	April 11
Bessie Mae Roach (80)	April 16
Joyce V. Johnson (84)	April 17
Erma G. Campbell (86)	April 18
John R. Sundberg (77)	April 24
Herbert W. Gentry (78)	April 27
Robert J. Hansen (90)	April 29
James W. Poukey (61)	May 1
Curtis Franklin (70)	May 4
Francis E. Bell (85)	May 21
James A. Mauldin (72)	May 22
Walter J. Haskell (77)	May 6
S. Elinor Coberly (89)	May 8

New Science and Engineering Tools for New Challenges



Sandia's responsibility for the stewardship of our nation's nuclear deterrent is based on fundamental science and world-class engineering. The nation halted actual nuclear testing in 1992 and has significantly reduced the number of nonnuclear tests.

Today we are developing new science and engineering tools to predict, model, assess, and design weapon systems. These efforts form a critical part of the Department of Energy's Stockpile Stewardship Program.

Processing of weapon components in a plasma chamber.

First of a series of 10 posters on "Stockpile Stewardship: Strength Through Science" prepared by Public Relations & Communications Center 12600 in cooperation with the Nuclear Weapons Strategic Business Unit. All 10 posters are on display in the Bldg. 800 corridor.

Mileposts

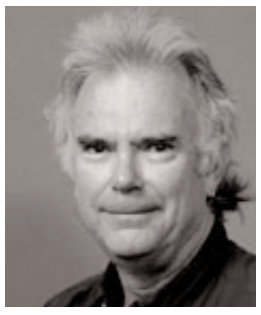
New Mexico photos by Iris Aboytes
California photos by Lynda Hadley


Dewey Berry
35 2995


Brien Bopp
35 2913


Pete Witze
35 8360


Paul Mix
30 1642


Steven Lambert
25 7138


Mark Mickelsen
25 2256


Bernice Mills
25 8723


Suzanne Simpson
25 10250


Daniel Yee
25 8111


Jacqueline Chen
20 8351


Douglas Gehmlich
20 2267


John Korellis
20 8725


Ruth Llamas
20 7111

Recent Retiree


Robert Easterling
34 7800

Feedback

Sandians ask questions on solar electric units, cell phones, celebration dinners, 401(k) contributions

Q: *If Sandia can supply solar electric units to reservations for power, why don't they have some kind of program for employees to buy smaller units for private home use?*

A: Thank you for your interest in solar electric systems. Sandia's solar electric (or photovoltaics, PV) program focuses on advancing the state-of-the-art in PV systems. We work closely with US industry to improve the cost and performance attributes of those systems. Sandia also works with many federal agencies and tribal communities to help them with the specification, procurement, and maintenance aspects of solar electric systems. However, we do not supply these systems. We encourage people to procure them from private sector industry suppliers.

For information on suppliers throughout the country, I encourage you to contact the Solar Energy Industries Association at http://www.seia.org or (202) 628-7745. For local suppliers, check the phone book under "Solar Products and Services" or contact the New Mexico Solar Energy Industries Association at http://www.nmseia.org or the New Mexico Solar Energy Association at http://www.nmsea.org.

If you decide to install a solar electric system, I encourage you to use a licensed electrician, particularly if you plan to connect the system to your home's electrical system. In addition, you many need to notify your electric service provider.

— Margie Tatro (6200)

***

Q: *I understand the ban on personal cell phones inside the tech areas, but I have a concern that needs to be considered now. As technology advances, more of us will be relying on these instruments. If I am driving my car, I can simply leave it in the vehicle in the parking lot. But I ride the bus and a bicycle a good bit and in both cases a cell phone would be a very handy item to have with me in case I have a problem and need to call for help. Would Sandia please at least consider installing small lockers like those at airports, bus stations, and train depots near the major gates to allow secure storage of these devices outside the tech areas? Or some other solution? They could be placed in the entryways of such buildings as the cafeteria, Medical, Bldg. 800A, 822, etc., to be near some of the major access points for bus riders and bicycle riders. There would obviously be some expense involved but a nominal fee charged like the ones in public places could recoup these costs eventually.*

A: Thank you for your concern as to whether Sandia would consider providing lockers for cell phones. During the development of the cell phone policy last year, we did consider installing lockers for use by bus commuters, visitors, and contractors who need a location to store a cell phone when they visit our limited areas. At that time, it was decided not to install lockers for various reasons, including practicality, liability, and security issues. At the present time, bicyclists at Sandia/New Mexico are allowed to register phones and keep them properly locked on their bicycles if they commute (please contact Nancy Aldridge at 844-8420). Visitors and contractors at Sandia/New Mexico are required to keep any cell phones in their cars. Visitors and contractors at Sandia/California may leave their cell phones with the Security Police Officer at the main gate. As a bus commuter in New Mexico, the best advice I can offer is to suggest you find a friend who would allow you to keep your cell phone in their car.

— Al West (7100)

***

Q: *Why does Sandia's team recognition system take one member of a team, invariably the team leader, and invite that member to the exclusion of all others to a celebration dinner? How does this promote team building? I can assure you, as one of the people in the trenches, that it does not. In fact, it breeds resentment. Instead of the current flawed system, Sandia should reward all members of the team in some manner. Comments?*

A: Sandia recognizes teams in many ways. In addition to sponsoring the Employee Recognition Awards (ERA) program that honors individuals and teams, Sandia sponsors the President's Quality Award (PQA) that recognizes teams that have made exceptional contributions using quality processes. Nonbase funds are available throughout the year to recognize individuals or teams at the discretion of managers. Employee and team achievements are recognized in town meetings, the *Lab News*, and lobby displays.

As part of the ERA process, each division does hold a recognition event to acknowledge every individual team member who received a nomination. This year, more than 2,600 individuals were recognized at 14 different Division ERA events.

To recognize ERA winners, executive management has decided to host a formal banquet funded by Lockheed Martin Corp. for each individual winner and team representative and one guest (about 240 people). If each member of every winning team were invited, plus a guest, this number would grow to 2,500. A number this large far exceeds the funding available.

— Don Blanton (3000)

***

Q: *Has any way been devised to make up for the fact that some of us were not allowed to contribute to our 401(k) plan (and receive matching contributions from Sandia) during our first year of employment here?*

A: When a policy is changed, many times there is a population that does not retroactively receive the same treatment. Such is the case of new hires being able to contribute to our 401(k) plan (without a company match) for their first year of employment. Prior to that time, all Sandia employees, regardless if they had been employed for two months or twenty years, were required to wait one year before participation.

You refer to the possibility of also receiving retroactive matching contributions from Sandia. There was no change in this policy. Even though new employees can now immediately contribute their own money to the 401(k), they do not start to receive the company match until their first anniversary.

— Ralph Bonner (10300)

Sandia Classified Ads

MISCELLANEOUS

BABY ITEMS: stroller, $95; maple crib & changing table, $200; toys, clothes, car seat. Gruda, 291-8433.

SOFA COVER, 96-in., ivory, elegant, excellent condition, washable, cost $120 new at Dillards, $60 firm. Haines, 296-7354.

YAMAHA PIANO, professional studio, excellent condition, 3 yrs. new, walnut, $1,300 below retail cost. Hayden, 323-5344.

TWO BEDROOM SETS, solid-oak loft bed, captain's bed, dresser plus student desk & chair, $500 ea. Butler, 292-8823.

CHILDREN'S BED, w/built-in drawers & nightstand, matching dresser; infant bouncer, stroller, walker, toys, clothes, shoes, etc. Heath, 440-1402, ask for Leila.

SAND FILTER, for in-ground pool, w/valve, piping, & 1-hp pump & motor. Mozley, 884-3453.

STAPLES CASH CARD, no expiration date, $167 value, asking $140 OBO; SW Airlines roundtrip travel coupons, expire 10/2001, $295. Wagner, 823-9323.

DINING TABLE, 42" x 72" drop leaf, solid pine, light-cherry stained top, black base, 2 side chairs, bench, $250. Thomas, 237-0467.

MAC POWER PC 6500/275 CPU, keyboard, & mouse, incomplete yet functional, some software, $50. Sinton, 828-9672.

TWIN BED, including mattress, headboard, & frame, $150; tan ginger-jar lamp, $15. Kovarik, 897-2188.

WASHING MACHINE, Norge Signature 2000, 20-lb. capacity, about 7 yrs. old, $25. Dubes, 550-5827.

CHANGING TABLE, Jenny Lind, wood, change pad, 3 shelves; stroller; $30 ea. Donnelly, 293-0542.

ALUMINUM WHEELS, 16x7, cast, cost $426 new per wheel, price negotiable. Bird, 856-0256.

FLUORESCENT LIGHT FIXTURE, 2 4-ft. tubes (not included), light oak frame, $25. Wangerin, 294-0534.

RECLINER, brown fabric, in good condition. $75. Casbourne, 268-3942.

ARKLA GAS GRILL, covered, wheels, includes extra butane cylinder, $35; trailer hitch, Class 1, U-Haul, new, $20. McCampbell, 797-1979.

STRATOLOUNGER RECLINER, pink, good condition, wall-away operation, all-steel mechanism, $40. Goetsch, 892-8366.

RED RACECAR BED, w/toy box, paid more than $300, asking $200. Fitzpatrick, 275-3422.

EIGHT-DRAWER WOOD DESK, great for student, $50; Bernina 930 sewing machine, w/attachments, $800. Bisbee, 293-0356.

MOVING BOXES, approximately 60, various sizes, including wardrobes & dishpacks, $25. Shaw, 857-9236.

TWO LARGE BOOKSHELVES, $25 ea.; golf clubs, $50; couch & loveseat, $25 ea.; rollerblades, $20; queen bedframe, $50; 2 TVs, $40 & $10; coffee table, $15; large rug, $40. Montemerlo, 256-4560.

CRAFTSMAN 10-IN. RADIAL ARM SAW, heavy wooden base, large 5-ft.-long table, carbide blade, very good condition, $225. Bennett, 298-1142.

MAYTAG WASHER & DRYER, available for viewing 7/13, approx. 5 yrs. old, great condition, $250 ea. or $450 pr. Greene, 343-9405.

CAMERA, RZ67 Professional System, like new, many extras, $6,200. Luther, 822-1187.

SHAR PEI/DALMATIAN PUPPY, black female, spayed, updated on shots, a great energetic family dog. Walter, 263-7720.

COMPUTER, 486DX2-66, 56K X2 modem, 20MB RAM, 500MB disk, CD/3.5"/5.25" drives, speakers, SVGA, manuals/disks, Win 3.11, Word 6, XL5, more, make offer. Hoe, 296-3654.

ANIMAL KENNELS, 10' x 6', $100 pc.; 12' x 13' beige carpet, w/pad, good condition, $50; 10' x 8' forest green carpet, $30. Rowe, 286-5432.

NORDICTRACK EXCEL, oak wood, approx. 6 yrs old, excellent condition, monitor tracks time/distance, $200. Olascoaga, 268-9991, ask for Mary Ann.

SUPER-SINGLE WATERBED, w/heater, liner, pad, $45; Sears Ultra Gympac weight system, $100. Zittel, 281-1023.

FORMAL DINING SET, solid cherry, mission style, table, 8 chairs, china cabinet, new condition, $9,000 retail, asking $3,500 OBO. Henry, 856-5915.

RED RACECAR BED, twin, Little Tykes, $250; Lowry organ, $150; HP color Jetset printer, $75. Sanchez, 898-9598.

FRENCH HORN, key of F, Holton, w/case, great for beginning student, beautiful condition, $300. Laub, 299-3321.

TIMESHARE, Where do you want to go? www.rci.com, 1 week, travel by Dec. 2002, $600. Taylor, 471-5707.

TWO-CARAT DIAMOND RING, beautiful 19-stone cluster, $2,200, ($1,300 below appraisal, appraisal available). Kalinina, 998-5184 or 275-3299, ask for Elena.

AUSTRALIAN SHEPHERD, blue merle female, blue eyes, loves people, protective, very smart, can be bred, $150. Harris, 869-3702.

MOVING SALE, dining room table w/6 chairs, kitchen dinette, entertainment center, & more, moving must sell. Evans, 238-6282.

SPA, 8' x 8', ozone filter, more jets than the Air Force, redwood enclosure, excellent condition, $3,000 OBO. Barnard, 842-0737.

GRAY-BANDED KINGSNAKE, captive-bred, w/setup, $150; '68 Camaro, 6-cyl. & 2-spd. trans. McCrory, 292-7516.

DINING ROOM SET, 1940's Drexel, mahogany table, china hutch, buffet, & 6 chairs, all excellent condition, $3,750. Bailey, 271-9715.

KITTY, black & white female, shots, spayed, cute, very mellow, needs an indoors-only environment, good with children. Thomas, 268-1532.

STUDENT FLUTE, excellent condition, well maintained, $350; computer, 133MHz Pentium, 6.1G HD, CD-ROM, 3.5 floppy, printer, $250. Patteson, 836-0140.

FRONT RECEIVER HITCH, for F150 truck, bolt-on, $35. Arning, 256-9229.

UPRIGHT BICYCLE MOUNTS, Yakima Lockjaw, for round-bar roof racks, $50 ea. or $80 pr. OBO. Arquitola, 796-0430.

DINING TABLE, w/6 chairs & buffet, $375; youth bed, w/mattress, $40; baby stroller, $50. Naranjo, 265-6369.

TWO CONCERT TICKETS, Barenaked Ladies, 8/11, Journal Pavilion, Row E, face value. Gonzales, 884-6858.

FILL DIRT, adequate for compaction but not ideal for growing plants in, approximately 10 cu. yds., free, I'll load. Pohl 271-1328.

BEDROOM SET, dark wood veneer dresser, chest, mirror, headboard, $150; luggage set, $25; men's suits, 36R, $25-40. Gonzales, 238-6402.

PATIO FURNITURE SET: 2 rockers & a double glider, $175. Marder, 291-8140.

SINGLE HORSE TRAILER, $600; pony cart, w/harness, $350; both in good condition. Holmes, 897-0916.

TWO SW ROUNDTRIP VOUCHERS, expire 1/4/02 & 4/11/02, good anywhere Southwest flies, $300 ea., cash only. Sanchez, 291-0524.

MAKEUP TABLE, solid oak, nice, $95; coffee table, stained-glass top, $50; cherrywood credenza, $50; girl's 10-spd. bike, $20. Grumblatt, 294-4738.

CRIB, Child Craft, solid oak, w/mattress, excellent condition, $200. Peery, 281-7233.

GALVANIZED PORCELAIN SINK, white, 22" x 33", double bowl, white Moen faucet & spray, like new $250 OBO. Iverson, 249-0072.

KING-SIZE WATERBED, waveless, w/12-drawer pedestal, mirrored headboard w/rose design. $400 OBO. Chavez, 243-9530.

TANNED ELK HIDE, hair on, balance of $237.25 left to pay & it's yours. Alexander, 291-8028.

TWO TABLE LAMPS, porcelain & brass, cobalt blue, gold trim, ivory shades, 32" tall, perfect, $100/both OBO. Hollister, 323-1659.

CAMPER SHELL, white, excellent condition, wood paneling inside, fits 8-ft. full-size bed, $350. Guthrie, 822-0968.

RABBIT, male, Dutch gray, healthy, cute, affectionate, large hutch & food included, $50 OBO. Ruby, 821-0982.

TWO GPS RECEIVERS, Magellan Mdl 2000, $50 ea. Roseth, 856-6964.

How to submit classified ads

DEADLINE: Friday noon before week of publication unless changed by holiday. Submit by one of these methods:

- **E-MAIL: Janet Carpenter (jacarpe@sandia. gov)**
- **FAX: 844-0645**
- **MAIL: MS 0165 (Dept. 12640)**
- **DELIVER: Bldg. 811 Lobby**
- **INTERNAL WEB: On Internal Web homepage, click on News Center, then on Lab News frame, and then on the very top of Lab News homepage "Submit a Classified Ad." If you have questions, call Janet at 844-7841. Because of space constraints, ads will be printed on a first-come basis.**

Ad rules

1. Limit 18 words, including last name and home phone (We will edit longer ads).
2. Include organization and full name with the ad submission.
3. Submit the ad in writing. No phone-ins.
4. Type or print ad legibly; use accepted abbreviations.
5. **One ad per issue.**
6. We will not run the same ad more than twice.
7. No "for rent" ads except for employees on temporary assignment.
8. No commercial ads.
9. For active and retired Sandians and DOE employees.
10. Housing listed for sale is available without regard to race, creed, color, or national origin.
11. Work Wanted ads limited to student-aged children of employees.
12. **We reserve the right not to publish an ad.**

CHILD'S BED, French Provincial style, white, mattress & box spring, $50. Floran, 237-2620.

OAK DINING TABLE, w/6 chairs, plush blue upholstery, beautiful styling, construction, excellent condition, $900. Tipton, 828-2538.

DUAL JOGGING STROLLER, good condition, includes canopy, dual cup holders, & baskets, $250. Kral, 298-6699.

PRO FORM CROSSTRAINER, weight system & stairclimber, electronic instructions, cost $800+, $400 OBO; workout weight station, w/preacher curl bench, great condition, $200 OBO. Tapia, 280-8888.

BABY CRIB, white Jenny Lind, $50; changing table, white, $20; telephone & answering machine, cheap. Rector, 286-1217.

RADIO FENCE, pet containment training system, keeps your pet in your yard humanely, $200 OBO. Brito, 833-5911.

QUEEN-SIZE WATERBED, solid oak frame, waveless, conventional bed height, w/4 storage areas under, $175 OBO. Frikce, 265-2865.

BOSE 901 SERIES II SPEAKERS, with EQ, walnut finish, good condition, $400 OBO. Dawley, 292-9249.

REFRIGERATORS: 21-cu.-ft. Kenmore, 14.2-cu.-ft. GE; apt.-size range, queen-size sofa sleeper, gas dryer, leather recliner, turquoise dishes, computer desk, kitchen utility cart, 2 barstools, Wallensack tape recorder. Lukens, 271-5724.

CLOTHES DRYER, Maytag, heavy-duty, electric, $150; Graco double stroller, navy/white gingham, w/double canopy, like new, $90. Reilly, 857-9908.

MOVING SALE, misc. household goods, exercycle, adjustable bed, sofa sleeper, La-Z-Boy recliner, small electronic organ. Gilmer, 299-2533.

CONNELLY POOL TABLE, regulation-size, excellent condition, all accessories, $1,800. Garley, 865-9482.

GRUEN CURVEX WATCH, '30s retro curved rectangular watch w/alligator band, like new, $100. Kercheval, 864-6549.

SECTIONAL SOFA, 9' x 9', good condition, $300; oak entertainment center, like new, $250; dining room table, 4 chairs, china, needs refinish, $250. Turk, 892-4199.

MOVING SALE: refrigerator, living room, bedroom, & dining room (w/6 chairs) furniture. Romero, 873-2157.

PSE INFINITY BOW, 60-80#, machined riser, fast cams, 4-pin sight, stabilizer, camo limbs, 28-31-in. draw, $180. Schroeder, 869-2243.

QUEEN-SIZE SOFA BED, med. blue, excellent condition, cost $850, asking $350. Benson, 299-3315.

THREE GOLDFISH, 5"-8" long, outgrew tank, to good pond home. Carpenter, 232-2665.

TRANSPORTATION

'97 GRAND AM SE, 46K, 4-dr., V6, AT, AC, ABS, AM/FM/cassette, PW, PL, cruise, warranty, $9,500. Sensi, 299-3958.

'97 TOYOTA CAMRY, V6, ABS, PW, PL, AC, new tires, 74K mostly highway miles, excellent condition, $11,800. Seager, 299-7629.

'71 VW SUPER BEETLE, 1600cc engine, has not been run in 3 years but did run well before being parked, great project or parts car, delivery available, $500 OBO. Trujillo, 797-0868.

'92 NISSAN 1600NX, T-top, AT, AC, AM/FM cassette, 2-dr., hatchback, 100K miles, $3,500. Hatch, 265-4642, ask for Kathy.

'89 TOYOTA CELICA GT, 3-dr. hatchback, 92K miles, sunroof, etc, great shape, no kids or pets, $3,500. Landa, 821-4374.

'87 DODGE RAM 150, 62K miles, good condition, no mechanical problems, AC, great work truck, only $2,250, call now. Lemmon, 856-9630.

'91 ISUZU TROOPER, 4x4, V6, 5-spd. manual, AC, PS, PB, 122K miles, great condition, $4,000. Field, 363-1157, ask for Tina.

'65 VW BUG, blue, new interior, new tires, runs great, excellent condition, must see, $3,800 OBO. Thomas, 294-2960.

'93 PONTIAC BONNEVILLE, 1 owner, 4-dr., AC, CC, PS, PB, PW, 97K miles, $5,400 OBO. Montoya, 344-3328.

'95 TOYOTA PREVIA S/C VAN, 43K miles, all records, PW, PL, AC, AT, below bluebook, $12,900. Woodall, 821-1736.

'97 TOYOTA T-100, 59K miles, V6, extra cab, standard transmission, matching shell, transferable extended warranty to 70K miles, great condition, $15,000. Giersch, 228-3528.

'95 EXPLORER LIMITED EDITION, black, 4x4, loaded, leather seats, tow package, command center, below Kelly, 87K miles, $15,900. Enyart, 823-4811, ask for Chris.

'96 INFINITI I30T, rare 5-spd., great condition, 76K original miles, fully loaded, $16,000. Flores, 831-0253.

'93 LEXUS LS400, white, loaded, excellent condition, all service records, 92K miles, $14,500. Stockham, 856-7768.

'99 GMC JIMMY SLT, loaded, towing pkg., like new, 14K miles, $21,000 OBO. Hackard, 299-4333.

'72 VW SUPER BEETLE BUG, convertible, classic, runs excellent, must see, $5,400 OBO. Sanchez, 238-5363.

'89 BUICK CENTURY, 4-dr., V-6, AT, AC, PS, PB, very good condition, 96K miles, blue, $2,995. Ellis, 899-7787.

'98 CHEVY 4x4, 1/2-ton, Z-71, ext. cab, short bed, 5.7-liter, AT, CD/cassette, trailer towing pkg., 3rd door, 19,200 miles, $20,500. Vigil, 271-1328.

'95 MITSUBISHI 3000GT, black 106K miles, looks & runs like new, $14,970 book value, asking $9,950. Heise, 823-6355 or 573-6355.

'95 MAZDA MIATA, M-Edition, Merlot, excellent condition, 63K miles, Robbins cloth top w/glass window, $12,000. Jung, 856-1181.

'99 HONDA CIVIC EX, 4-dr. sedan, 5-spd., loaded, 18K+ miles, $12,999 ($1,200 under book). Nunez, 823-9203.

'35 FORD, restored, 8-cyl., rumble seat, dark blue, molehair seat, garage-kept. Myers, 883-3671, ask for Richard.

'94 NISSAN XE PICKUP, king cab, 5-spd., 64,800 miles, great condition, 1 owner, $5,500. Young, 821-9852.

'92 HONDA ACCORD EX, 75K miles, cruise, sunroof, cassette, $7,000; '96 Toyota 4Runner SR-5, 49K miles, CD, $17,000; both have alloy wheels, & new tires. Hassan, 822-9544.

'94 TOYOTA COROLLA DX, AC, good condition, $3,500 OBO. Parkhill, 899-9060.

'96 FORD RANGER, red/tan, 3.0-liter V6, AT, AC, bed liner, tonneau cover, alarm, etc., 35,979 miles, $9,700. Hill,450-5523, ask for Mat.

RECREATIONAL

SEA KING ALUMINUM BOAT, 14'L x 4'W, 3-hp engine, w/oars & anchor, $560. Gonzales, 823-2981.

'78 COLEMAN POP-UP, 2-burner stove, sink, new tires, new curtains, new tire covers, $875. Miller, 332-4845.

'00 HARLEY-DAVIDSON, w/trailer, 4-year warranty, lots of chrome & extras, $25,000. Eberhart, 296-8154.

'98 BAJA 212 ISLANDER, loaded, 7.4 engine, 310-hp, matching Dorsey trailer, stored indoors, excellent condition, $31,500. Strader, 828-1936.

BMX BIKE, '99 Haro Dave Mirra 540 Air, good condition, hardly ridden, $150 OBO. Vieth, 281-2003.

'95 BETA TRIALS MOTORCYCLE, new rear tire, runs great, $1,800. Bonahoom, 296-4450.

EDDIE MERCKX RACING BIKE, full Dura-Ace components, 60cm frame, dark blue/orange, white frame, ridden approximately 1,500 miles, very nice condition, $725. Lindgren, 271-1328.

MOUNTAIN BIKE, Diamondback Racing, Vertex model, aluminum 17-in. frame, Ti spokes, XT components, Grip-Shift shifters, White Bros hubs, $350. Padilla, 271-1328.

FREE-STYLE BMX BIKE: Venom Diamondback, excellent condition, hardly used, paid $300, asking $100 OBO. Kelly, 293-2745.

'99 PALOMINO POP-UP TRAILER, excellent condition, new tires, new battery, lift kit, refrigerator, porta-potty, sleeps 6, lightweight, $4,700 OBO. Garcia, 263-7014, cell phone.

'93 CRUISE AIR MOTORHOME, 34-ft., 230 Cummins diesel w/6-spd. Allison, 7KW generator, dual AC, loaded. Clement, 890-0515.

REAL ESTATE

3-BDR. MOBILE HOME, '95 Cosvo mini double-wide, 24' x 44', 2 baths, $20,000. Padilla, 873-0465.

2-BDR. COTTAGE, 10 miles from Angel Fire, w/lots of antiques, $75,000 fully furnished, $69,000 unfurnished. Martin, 296-8154.

3-BDR. TOWNHOME, 1-3/4 baths, 1,040 sq. ft., new roof, backyard access, close to KAFB, must see, $79,000. Myers, 294-1648.

2-BDR. HOME, 1 bath, 1,000 sq. ft., garage, carport, yard w/access, near SNL, $89,000. Chavez, 294-6291.

6-BDR. EAST MOUNTAIN HOME, 4,650 sq. ft., gated street end, 5 acres, horse barn, corral. Kaminski, 281-5328.

WANTED

HOUSEMATE , share 3-bdr. home w/1 other person, near UNM/Nob Hill, nonsmoker, no pets, $300 + 1/2 utilities + DD. Gurule, 321-4936.

'90-'95 FORD BRONCO, prefer 5-spd. manual transmission w/4WD. Zender, 294-8210.

MOTORCYCLE, for beginner, 125-500cc, road bike or dual purpose, street-legal, good mechanical condition, reasonable. Kureczko, 286-4426.

KING-SIZE HEADBOARD only, no footboard or frame. Harrison, 821-9099 or 821-8211, leave message.

Work Wanted

BABYSITTING, teenagers seeking children (3-7 yrs. old) in need of babysitting in your home, Eubank & Candelaria area. Vargo, 294-8226.

LOST & FOUND

SWISS ARMY KNIFE, found 6/25 in parking lot south of Area 1, call to claim. Redmond, 823-2109.

SILVER ANKLE BRACLET, found in front of Bldg. 868. Otts, 292-4897.

TWO SMALL SILVER KEYS, on white plastic wire-tie, found at Gate 1. Anwyl, 844-2897, ask for Joyce.

Lee Cunningham's artistry for children brings him a priceless 'Michelangelo'

By Iris Aboytes

When Michelangelo painted the Sistine Chapel, his only audience was the Pope. Lee Cunningham, Dept. 12630, on the other hand, had quite an audience when he painted his masterpiece earlier this year for the Presbyterian Ear Institute.

The Presbyterian Ear Institute, with the help of cochlear implants, helps deaf and hard-of-hearing children hear and learn to speak. The implants give the child an access to sound. It opens up a new world.

Lee says the project started out by his volunteering for "Make a Difference Day."

The deal was this. Presbyterian Ear Institute would furnish all the materials, and Sandians were to build shelves.

The shelves were built by Lee, two other Sandians, and two UNM students. After the shelves were built there was still an abundance of lumber. Just cut the leftover lumber the width of shelves, Judy Putnam, director of development, at the Presbyterian Ear Institute, said.

Stages were needed for the Christmas pageant and Lee's help was enlisted. On the stages he painted strong messages. "I can hear. I can read. I can sing, and with your help and with your love I can be anything." Still there was lumber.

Lee volunteered to build cubbies (lockers and drawers) so the little ones could store their prized possessions. Building the cubbies took about three weekends. Then — being a former illustrator for the Labs, Lee had this great idea. He would paint cartoon images on them. Something with bright colors that would make the faces of the children come alive.

His garage became his Sistine Chapel and he set out to create. Each (24) image/caricature took about eight hours of painting. With the garage door open, he began his labor of love. Viewers included neighbors, local children, and strangers driving by. He painted, and he painted. First one, then another, and still another.

His wife, Jimmie, was like Michelangelo's pope. "When are you going to finish?" she would ask.

Cubbies finished, still there was lumber. Lee proceeded to build benches, again painting his images. Finally, 250 to 300 hours later, he was finished. No more lumber!

When asked what he received besides personal satisfaction, Lee is quick to point to a framed piece of artwork. It is covered with tiny handprints, each with an original smiley face. Some have eyelashes, some just circles, but all radiate warmth from within.

"This," he says, "is my Michelangelo, the most valued piece of work I own. But the real gift you cannot see. It is in the faces of the children, and the bear hugs I was given."

A TRUE MASTERPIECE — Lee Cunningham (12630) shows off his most treasured piece of art — a "thank you" note from students at the Presbyterian Ear Institute for his hundreds of hours of volunteer work building and decorating (with beautiful classic cartoon images) shelves and cubbies for them. (Photo by Randy Montoya)

Sandia earns DOE small business award

Sandia has received DOE's Small Business Special Emphasis Award. The award was presented at the second annual DOE Small Business Conference, "Excellence in Energy with Small Businesses," in Las Vegas, Nev., June 19-22.

The Special Emphasis Award was given to Sandia for its special initiatives, including:

• **The New Mexico Small Business Tax Credit Act (NMSBA):** Through its NMSBA program, Sandia can provide up to $5,000 worth of technical assistance to urban small businesses in the state and up to $10,000 worth of assistance to rural ones. To date, 65 businesses have utilized this program and another 100 applications are being considered.

• **Procurement Council:** This council consists of key members of Sandia's senior management. The council oversees the corporate strategy for strategic sourcing, including defining overall policy and vision for the future. The council is committed to helping Sandia achieve socioeconomic goals by working with small businesses.

• **Supplier Community Advisory Council (SCAC):** This council began in February 1999 to strengthen Sandia's relationship with the community. It comprises community leaders, key suppliers, and DOE and Sandia management. The council advises Sandia's senior management on procurement-related issues. Members also familiarize themselves with the Labs and work with other members to explore business possibilities.

• **Supplier Recognition Programs:** Sandia has a Just-In-Time (JIT) Award luncheon each spring to honor companies that provide exemplary service in the JIT arena. Another recognition program awards suppliers exemplary performance certificates.

• **Supplier Homepage:** In existence for three years, the Supplier Homepage (http://www.sandia.gov/supplier/index.html) provides general information about doing business with Sandia and a quarterly newsletter to keep suppliers abreast of Sandia's new initiatives, ideas, and guidelines.

• **Quality/Excellence from Suppliers Team:** This contractor evaluation program provides an environment for superior supplier performance by providing contractor performance feedback and an opportunity to discuss performance with buyers and requesters.

• **Chamber of Commerce and 8(a) Association Reviews:** To assist Sandia's buying staff obtain local, qualified businesses for inclusion on bid lists, the various Chambers of Commerce in Albuquerque periodically review all competitive statements of work and requests for qualifications over $100,000.

• **New Mexico Small Business Advisory Council:** Sandia teamed with New Mexico Lt. Gov. Walter Bradley on the New Mexico Small Business Advisory Council and held 12 meetings with small businesses across the state to determine barriers to doing business in New Mexico. The new NMSBA program was also introduced.

Coronado Club

July 13 — Karaoke Night, 8 p.m., C-Club members free; guests $2.

July 26 — German Night, featuring German music, food, dancing, and drinks. Call 265-6791 for details.

July 12, 19, 26 — Thursday night bingo. Buffet opens at 5 p.m., card sales at 5:30 p.m., early bird special at 6 p.m., regular bingo at 6:15 p.m.

July 19-22 — Pool closes early (at 5 p.m.) on Thursday, July 19, and is closed all day July 20-22 while the C-Club hosts the annual Sundance Swim meet.

Oracle application access on the internal web starting July 16

Oracle Financial & Manufacturing Applications software is being upgraded to be web-based. Access to the applications will be through a web browser (Netscape or Internet Explorer) starting July 16. The new Spend Plan Tool will also become part of the Oracle web-based applications. The Oracle upgrade provides the basis for adding more e-commerce capabilities in the future.

Access to Oracle Financial (which includes Financial, Purchasing, and Fixed Assets), Oracle Satellite, and Manufacturing Modules will be done through the new Oracle Financial & Manufacturing home page. (You can set a bookmark for later use at https://sahp3128.sandia.gov:8807/SNL_COMM/homepage/fin-startpage.html.

Beginning on July 16, the Oracle Financial & Manufacturing home page can also be accessed via a direct link from the internal web home page. (The link will be called "Oracle Financial & Manufacturing Application.")

Name change for MDE

Sandia's Manufacturing Development Engineering program (MDE) has been renamed the Concurrent Design and Manufacturing program (CDM). Among the reasons for the change, says Div. 14000 VP Lenny Martinez: The new name more accurately reflects the range of capabilities that Sandia provides to DOE and the National Nuclear Security Administration (NNSA) for efficient, advanced manufacturing of components to War Reserve specifications. The name more fully describes the principles and actual processes used to reduce costs and guarantee the highest quality standards, while delivering technically challenging components on time and within budget.