

Narath Returns as President

"Time will tell." That's what Al Narath said two years ago when asked by LAB NEWS if he'd be coming back to Sandia someday. (Al was an executive vice-president at the Labs before becoming vice-president for government systems at AT&T Bell Laboratories in 1984.)

Now time *has* told; Al, who joined Sandia as a staff member in 1959, will become Labs president on April 1; he succeeds Irwin Welber, who is retiring. "I know Sandians will be as happy to see Al return in this important post as Al is to be coming back to the Labs," says Irwin.

Al's selection as president was confirmed by Sandia's Board of Directors Feb. 6. The appointment represents a first: He's the first "home-grown" Sandian to assume the top job since AT&T took over management of the Labs in 1949. All other Sandia presidents transferred to the Labs from either Western Electric (now AT&T Technologies) or Bell Labs.

"My five years at Bell Labs will, I believe, be beneficial in terms of the new job at Sandia," said Al during a recent phone conversation. "I've developed a different set of insights into defense matters — especially on the relationship between DoD and defense contractors. And I'll look for continuing opportunities to strengthen the ties between Sandia and AT&T."

'The Only Home I've Ever Known'

"I'm looking forward to returning to the Southwest — to the people and to the land," Al continued. "It's really the only home I've ever known."

"And I'll be glad to be on the scene again at Sandia. The Labs has an exciting atmosphere; it's a 'can-do' kind of place. One of its greatest strengths is its strong, broad technology base. That, coupled with outstanding people and management, enables Sandia to propose and execute programs in a way that generates considerable credibility — within the technical community and among its customers."

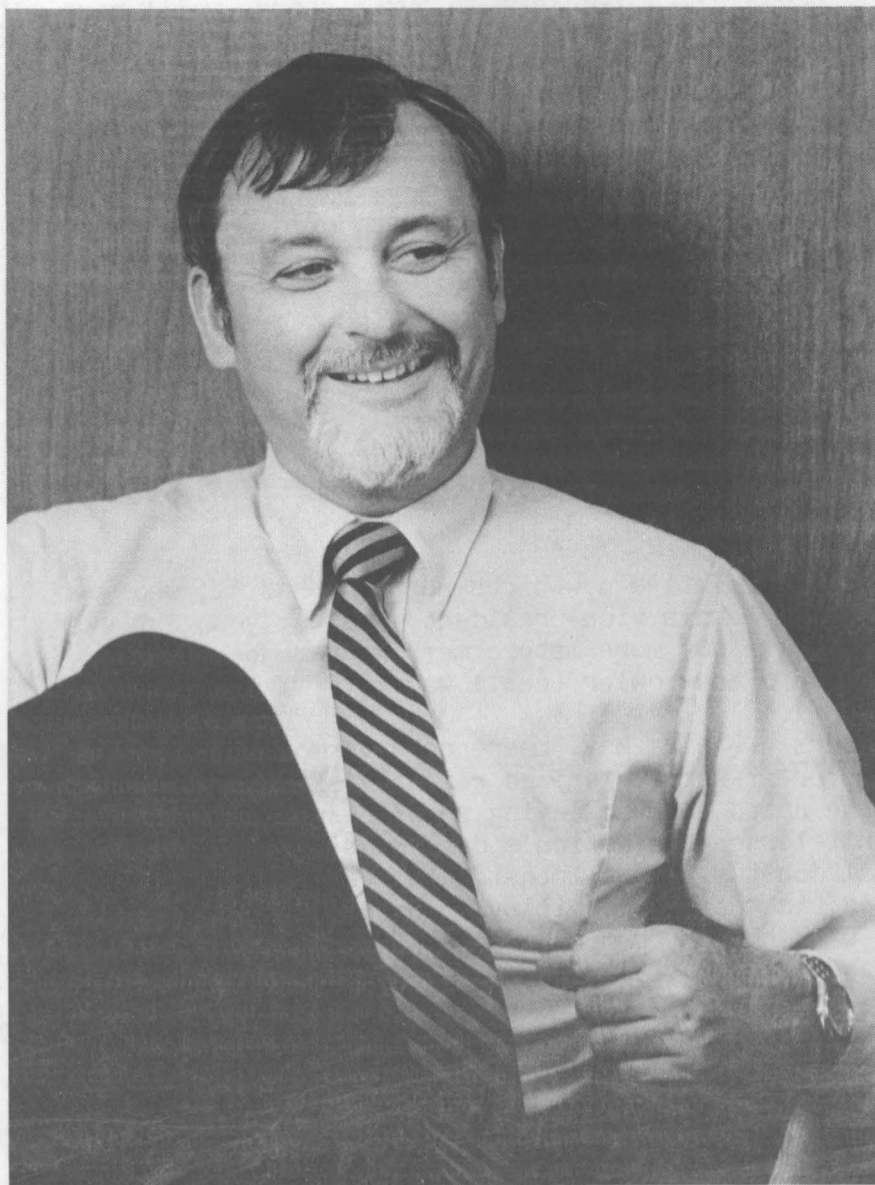
During his 25 years at Sandia before moving on to Bell Labs, Al rapidly rose through the management ranks. He was promoted to division supervisor in the Physical Sciences Research Department in 1962 and became manager of the department in 1964. Four years later, he was named director of solid-state sciences research and, in 1971, was appointed managing director, physical sciences.

A Young VP

Al became one of Sandia's youngest vice-presidents when, at the age of 40, he was appointed vice-president (research) in 1973. He also served as VP of weapon and energy programs before being elected EVP (with responsibility for research, advanced weapon systems and components, and administration) in 1982.

He received his BS in chemistry from the University of Cincinnati, and his PhD in physical chemistry from the University of California at Berkeley. He is a Fellow of the American Physical Society and was elected to the National Academy of Engineering in 1987.

Al has served on a number of national advisory committees, including the DNA Scientific Advisory Group. In 1987, he chaired a Basic Energy Sciences Advisory Committee panel investigating the potential of new high-temperature superconductors for use in accelerators such as the Superconducting Super Collider.



AL NARATH — "home-grown Sandian" — will become Labs president on April 1.



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CONGRESSMAN BILL RICHARDSON is welcomed to Sandia by Irwin Welber. During the January 25 visit, Representative Richardson (of NM's Third Congressional District) was briefed by members of Small Staff.

**See Inside—
Special Section
"Focus on ES&H"**

Antojitos

Welcome Home, Al -- For the first time in our history, we'll have a new president we won't have to break in. However rewarding that task may have been -- and however right for the job the subject was -- it's great to have a president who knows, firsthand and first thing, the rich history, the complex corporate culture, and -- most important -- the unique capabilities of the place and its people. "At this critical time in our nation's history, it's ideal to have a Sandia-experienced Sandia president taking over," says current President Irwin Welber.

Al's return from Bell Labs after five years of AT&T seasoning is no real surprise; when Al moved east in 1984, then-President George Dacey said, "We're losing a talented manager, but -- who knows? -- as my own career demonstrates, people do sometimes return." (George had been sent out here as Research VP in the early '60s; he then rejoined Bell Labs before returning to Sandia as president in 1981.)

Well, George, your crystal ball was well calibrated. But you weren't the only prescient one; for many of us, it wasn't a question of whether, but when.

* * *

More Al -- Lots of us relative new-hires assumed that Al, who was barely 40 when he became a Sandia vice-president, was the youngest ever in such a post. Not so. As our more mature members remember, Ray Powell (ret.) was 38, and Glenn Fowler (ret.) was 37.

* * *

'What Really Matters' -- Mike May, Lawrence Livermore Natl. Lab's former Associate Director-at-Large, retired recently after 33 years. In his farewell speech, he noted that achieving sharp reductions in strategic arms wouldn't lessen the nation's deterrent capability because sheer numbers of arms "don't matter all that much. What really matters, what must be preserved, is the survivability of weapons systems and everything that goes with them" (from LLNL's Newsline, Jan. 25, 1989).

* * *

How Sneaky Do We Tolerate? -- I have a copy of a note to Security in which a Sandian protests the "general police-state atmosphere" created by the KAFB gate guards when they check base decals of incoming traffic during morning rush hour. "Persuade the Air Force to lighten up a bit," the note continues. "I don't like being treated like a criminal for coming to work."

Neither do I. But, let's face it, there are some -- the few, the conniving, the sneaky -- who have pushed KAFB into the super-check mode, and some of those are Sandians. They (according to a recent Security Brief) tape their decals to their windshields so they can remove them later and park in visitor lots. Or they stop traffic every morning to present ID cards at the gates so they don't have to buy the insurance needed to get a decal.

They are exploiting the rest of us much as do those who speed south on the outside lane of Wyoming, then wedge themselves into the proper lane just outside the gate (or those who avoid the Central-Eubank light by using Southern and bullying their way into southbound traffic).

So I understand, even if I don't like, the Base's response. What I don't understand is why we don't meet the first two sneakiness problems head-on. Why not have a computer kick out the Base decal list by organization and ask each supervisor to account for any of his/her people not represented because they don't have insurance? Why not cite cars without temporary passes parked in the visitors' lots? ●BH

Labs Recruiting Apprentices

Sandia is now recruiting persons with the background and interest that will qualify them for apprenticeships in Mechanical Technician or Electronic Technician programs.

"We plan for successful applicants to join Sandia in the fall of 1990," says Jay Sanchez, supervisor of Personnel and General Employment Div. 3533. "Sandia will also establish a pool of eligibles in these programs for anticipated openings through the summer of 1991."

Jay urges employees and retirees to tell their relatives and friends about the opportunities Sandia provides through its apprenticeship programs. Employment Coordinator Terri Giron-Gordon (3533) says, "Typically, a number of the applicants are referred by friends or relatives who work at Sandia."

Applicants are also being sought through newspaper ads in Albuquerque and elsewhere, through the NM Department of Labor, and by recruiting at T-VI.

Successful applicants will complete approximately five years of on-the-job and classroom training leading to a tradesman position at the Labs.

Qualified minorities, women, and handicapped people are particularly sought, according to Jay: "These positions provide excellent career opportunities for all candidates."

Competitive Process

The process of choosing apprentices is highly selective. Each applicant will be judged by his or her score on a test administered by Sandia, previous schooling, past work experience, and other job-related factors.

At the same time, Terri emphasizes, the positions are entry level. "The only formal requirement for being considered is a high-school diploma or equivalent, plus citizenship and age requirements."

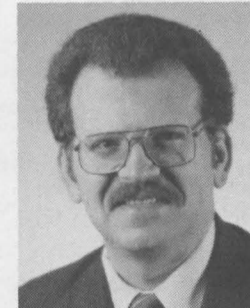
Applicants must be US citizens and high-school graduates between 18 and 30. The maximum age for those with active military service can be 30 plus length of service up to five years. To be accepted, applicants must also meet the physical requirements of the job and undergo a DOE security investigation.

All applications from outside Sandia must be made through the NM Department of Labor, Employment Security Division, at 501 Mountain Road NE, from Feb. 22 through March 8, 1989.

On-roll employees may apply through the post-and-bid process. The positions have been posted on the bulletin boards.

Additional information may be obtained from Personnel Representatives or from Terri (4-4258).

Supervisory Appointment



THEO POPE to supervisor of Plant Maintenance Div. 8513, effective Jan. 16.

He comes to Sandia from Hanford, Wash., where he was Instrument and Electrical Section Manager in the Plutonium Uranium Extraction Facility. Before that, his positions included manager of planning and scheduling for the Fuels Manufacturing Facility, supervisor of the multi-craft crew for the fuels facility, and maintenance scheduler at the Hanford N-Reactor.

Theo earned an Associate of Arts degree in business from Columbia Basin College (Pasco, Wash.) and served six years in the US Navy where he was trained as an electronics technician and reactor operator.

He and his wife Hiedi and 10-year-old twin daughters plan to locate in the Manteca area. Theo's outside interests are jogging, cycling, and swimming. He has also been active in the Hanford area chapter of the National Management Association.



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RUSS CURTIS (3431) received a 1988 Profiles of Courage award recently. Sponsored by the NM Vietnam Veterans Leadership Program, the awards are presented annually to a small number -- Russ was one of nine -- of New Mexico Vietnam veterans "who have performed personal, quiet acts of courage in the pursuit of their own peace after serving their country."

The Thrill of the Catch, and the Thrill of Publication

Telling fish stories is an art form for many, but mechanical engineer Ray Rychnovsky (8436) has turned it into a paying proposition. "I rely on cold — as in water — facts," says Ray. "And I back them up with photos that prove the big ones didn't get away."

For the past 10 years or so, Ray has devoted most of his vacation days and many weekends to fishing, from the waters of Northern California to those of Alaska.

But just catching the big ones isn't enough. Ray records the action with his 35mm camera, then comes home to his word processor and recreates the thrilling moments on the water when he hooked and hauled in the salmon, ling cod, sturgeon, bass, or trout.

Fishing has been Ray's lifelong love. "It started," he recalls, "when I was six years old and my father began taking me to the Iowa streams and rivers near where I grew up. It was catfish and bluegills back then."

Much later, college graduate Ray moved to Albuquerque, still fishing when he could find the time. When he transferred to the Livermore area 26 years ago, he became an even more avid rod-and-reeler. Now he splits his free time between saltwater and freshwater fishing, between fly casting and spin casting.

His favorite catches are salmon, which are also his favorite dinner entree, along with the rockfish that he enjoys grilling at home.

His Biggest Catch

"But my biggest catch out here was a 52-lb. sturgeon four years ago in the Bay," says Ray. "I released it because sturgeon are in rather short supply around here, and it could help propagate the species." No, it wasn't a record; Ray is quick to point out that his was a minnow compared to the US record for freshwater catches — a 468-lb. sturgeon caught in nearby Benicia a few years ago. "Now that took hours of effort, a lot of skill and persistence, plus some luck," he adds.

About 10 years ago, he decided to try selling a story about a fishing trip and mailed off a typed manuscript to *Saltwater Sportsman*. The story got rejected after a long wait, however, and he gave up the idea for a couple of years.

Then, at an outdoors show, he saw a booth promoting a new magazine and asked whether the editors would be interested in the article he had tried to



HOLDING TWO FRONT COVERS on which he's been featured, *Western Saltwater Fisherman* and *California Angler*, is Ray Rychnovsky (8436). He's a regional editor for the *Angler*, writing a monthly column in addition to contributing regular features.

sell before. They liked his work and published it, launching him on a writing career that now totals more than 130 articles in eight regional and national magazines — including the multimillion-circulation magazines *Outdoor Life* and *Field & Stream*.

He turns out 1500 to 3000 words for full-size features, plus color slides to accompany them. "You have to know what the magazine wants and how far ahead to write — most of them need seasonal articles three months in advance," he notes. To meet these advance deadlines, he sometimes saves his story notes in the computer for six months to a year before polishing and submitting the story.

"I'm a perfectionist, so I often write six or seven drafts, then have my wife proofread my 'final' after

I've gone over it several times. I'm not a college-trained writer, so I really appreciate my computer's thesaurus and spell-checking features."

The Best: A Front-Cover Pic

Ray has some 5000 slides, filed neatly in large binders (and has tossed out another 3000 less-desirable shots over the years). Many he took himself; others were taken by his fishing mates. "It's tough to catch a fish and take a picture of yourself catching a fish simultaneously," he points out.

The slide photos he provides with his articles "are just as important as the articles themselves," he says. "Best of all is getting your picture on a front cover."

Ray has done that a few times already — his own photo has appeared in full color on two covers in recent years. "The readers want more than just a good fish story nowadays," Ray explains. "They want to know where to go and how to catch what the writer did — only better and bigger."

On his last trip to Alaska, he experienced "some of the most thrilling fishing of my life. We caught four out of the five species of salmon, and many were spectacular fighting silver salmon. Not the biggest — only eight to 15 pounds — but what action hooking into a sport fish like that! They jump continuously; one I hooked made a leap 15 feet across the water.

"I also hooked into a 30-pound Chinook salmon. Luckily, the guide got the boat motor started so we could follow him, because, with my light six-weight fly rod, he had taken practically all my line out. Eventually, we caught up with him and kept the boat over him until he tired and I could bring him in."

Congratulations

To Deborah and Randy (8523) Christman, a daughter, Alexandra Nicole, Jan. 26.



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Advice for Anglers, New and Old

Ray Rychnovsky's (8436) advice for the beginner who is thinking about fishing as a pastime: "Go out on a party boat if you have a tolerance for seasickness, and rent all the gear for a day (\$40 or \$50) to see how you like it.

"If you just want to fish the local lakes and Delta, you can outfit yourself for as little as \$50 with rod, reel, line, hooks, and sinkers. If you want to get into saltwater fishing in a big way or fancier fly-casting equipment, you can spend up to \$500 without much effort," he adds.

And then, of course, there's the decision of whether to invest in a motorboat, cabin cruiser, or something larger. (So far, Ray has resisted that major purchase and mostly goes with friends, guides, or fishing party boats.)

He reminds the experienced hook-and-line enthusiasts that the salmon season opens and the salmon begin running south into the waters off San Francisco and Monterey in mid-February. "Right now, sturgeon and striped bass are being caught in the Delta, and trout, black bass, and panfish are biting in the lakes and rivers.

"So dust off that tackle box, oil up that reel, and thread that pole," says Ray. "The fishing's never bad in Northern California!"



SEVERAL SANDIANS WILL BE RECOGNIZED for their outstanding publication design and artwork by the Society for Technical Communication at a March 4 banquet in Oakland. Two of the winners in the 1988 Northern California Technical Publications and Art Competitions were the publications in this photo. Receiving a top-ranked Distinguished Technical Communication Award was the 1987 *Combustion Research Annual Report* with editor Cynthia Ivanetich (KMI contractor) and designer Jack Bishop (8535) looking it over. Taking a second place, the Award of Excellence, was the International Energy Agency's *Conservation in Combustion: A 10-Year Report*. It's examined here by its designer, Stewart Wavell-Smith (standing); John Daniel (both 8535) was art director for both projects. Not pictured is former Sandian Michael Alley, the IEA report's editor.

Supervisory Appointments

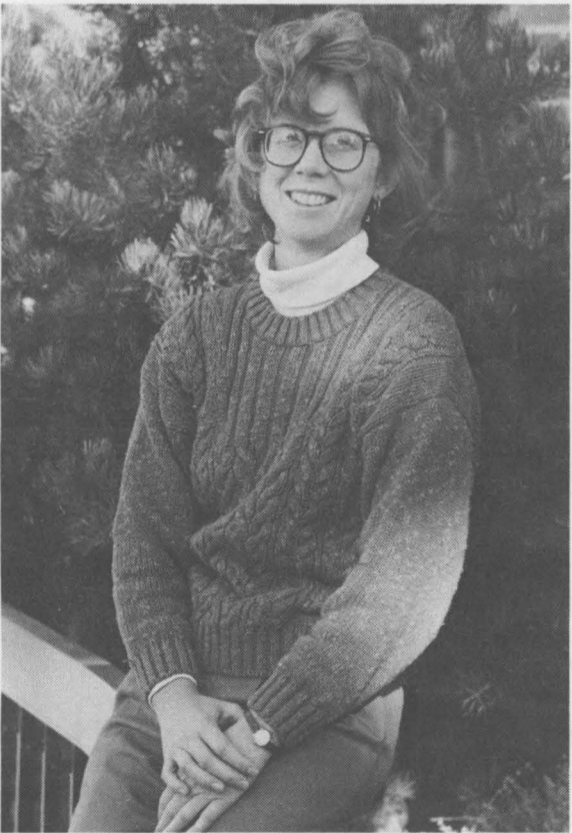


BRUCE DAVIS to supervisor of Payment Processing Div. 154, effective Dec. 16.

Bruce joined Sandia's Property Accounting Division in 1980. In 1981, he transferred to Purchasing's Small Disadvantaged Business Relations Division. He became a buyer in 1981, and joined the Purchasing Planning Division in 1982. From 1983 until 1986, Bruce was Org. 2300 administrative assistant. He transferred to the Energy and External Liaison Budget Division in 1986. In June 1988, he was promoted to supervisor of Payment Processing Section 154-1.

His educational background includes a BA in accounting from UNM and an MBA from Highlands University.

Church activities take up Bruce's spare time. He and his wife Alice have one daughter and live in the SE Heights.



SUSAN STINCHCOMB to supervisor of Technical Library Reference Div. 3144, effective Dec. 16.

Susan joined Sandia in July 1972 as a programmer/analyst in the Personnel organization, where she worked until her promotion. Before coming to the Labs, she worked for the Richmond (Va.) Public Library and Access Innovations software company in Albuquerque.

She has a BA in economics from Texas Woman's University, an MS in library science from Florida State University, and an MS in information systems

from Virginia Commonwealth University.

In her spare time, Susan is a volunteer at the Corrales Community Library and is on the board of the Friends of the Corrales Library. She lives in Corrales.

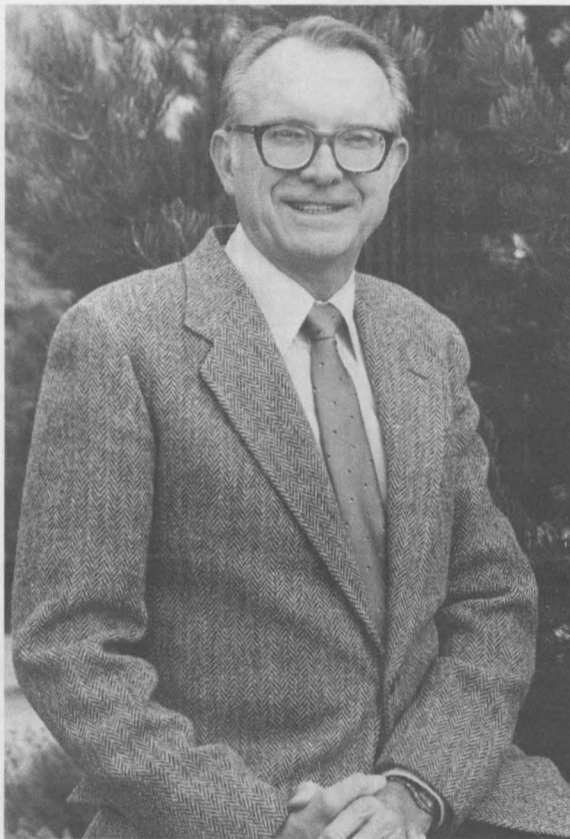
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JAMES (J.D.) WILLIAMS to supervisor of Exploratory Development Div. 5268, effective Dec. 16.

J.D. has been involved in semiconductor and safeguards technology since he joined Sandia in April 1963. He joined the Microelectronics Division, was promoted to supervisor of the Semiconductor Device Division in 1969, and headed the Integrated Circuits Division until 1975. He then transferred to the Safeguards organization, where he supervised the Intrusion Detection Systems Technology Division. J.D. left the Labs in 1984 to form the WLS Group, a security systems technology-transfer company.

He returned to Sandia in March 1987 as a member of Advanced Systems Dept. Staff 5260A, where he developed portable physical security equipment for the US Army. He transferred to Advanced Systems Integration Div. 5261, effective Jan. 16, where he continues to develop physical protection systems.

J.D. has a BS and an MS in EE, both from MIT. He earned a PhD in EE from Purdue University, and served four years with the US Navy. He's a senior



J.D. WILLIAMS (5261)

member of IEEE and the Institute of Nuclear Materials Management (INMM). J.D. received the INMM Distinguished Service Award in 1987 (LAB NEWS, Aug. 14, 1987).

He enjoys outdoor activities and auto mechanics in his spare time, and is active in church activities. He and his wife Wilma have four children. They live in the NE Heights.

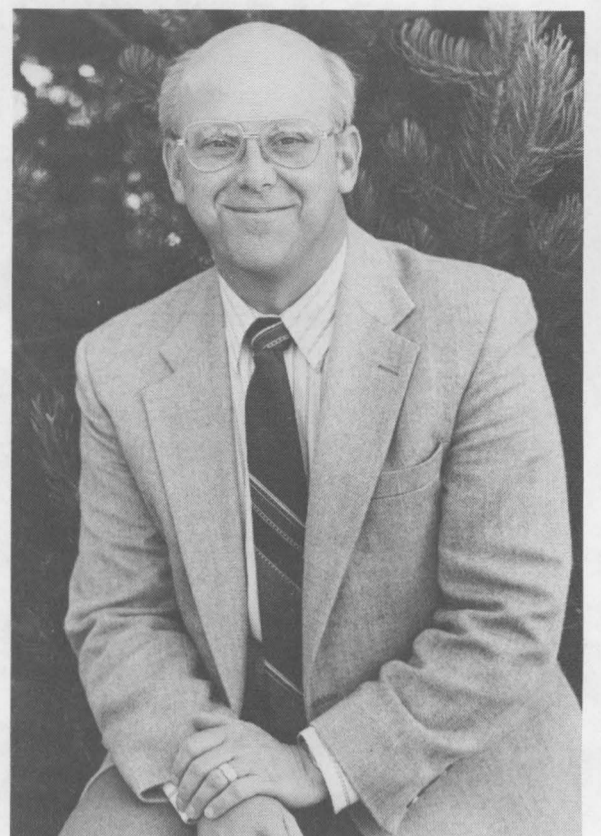
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STEPHEN ROEHRIG to supervisor of Advanced Technology Div. 5267, effective Dec. 16.

Steve was with Rockwell International, Autonetics Division, in California before joining Sandia's Physical Security Systems Division in 1976. He helped develop physical security systems for ten years, then transferred to the Advanced Projects Department in 1986, where he researched advanced conventional munitions. In 1987, Steve returned to Physical Security Systems. He was project leader for the security upgrade in Area V and for the Interior Sensor Laboratory.

He earned a BS and an MS in physics from the New Mexico Institute of Mining and Technology. He's a member of the Association for Unmanned Vehicle Systems.

In addition to woodworking and building his home, outdoor activities such as camping, hunting, fishing, hiking, and cross-country skiing take up



STEVE ROEHRIG (5267)

Steve's spare time.

Steve and his wife Mary have three children and live in the East Mountain area.

* * *

LAURA McCARTY to supervisor of Document Production and Administrative Services Sec. 3731-2, effective Jan. 16.

Laura joined the Labs in March 1979 as a secretarial trainee in the Classification and Sensitive Information Review Department. She then worked as a division secretary in the Technical Library and in the Benefits Division.

In 1980 she joined the Medical Department as a workman's compensation clerk and secretary, and in 1983 transferred to the Measurements Standards Lab as a budget coordinator/department secretary. She became an administrative assistant in the Transportation Systems Development Department in 1984.



LAURA McCARTY (3731-2)

In 1986 Laura joined the Purchasing Department as a contract administrator/buyer.

Before coming to Sandia, Laura worked for the Albuquerque Public School System and the Rehabilitation Center. She has taken education and behavioral studies classes at UNM and computer classes at TVI and Sandia.

Laura enjoys square- and round-dancing, hiking, and reading in her spare time. She and her husband Charlie (2171) have two grown children and live in the NE Heights.



At Sandia Facilities

DOE Outlines Suspected Environmental Problems

Real and "suspected" environmental problems at Sandia's Albuquerque, Livermore, and Tonopah Test Range (TTR) facilities have been producing headlines since release of a preliminary report by DOE in December. The 488-page report discusses problems at DOE's primary Nuclear Weapon Complex (NWC) facilities and is part of a multi-year DOE Environmental Survey to determine the extent of problems, how to remedy them, and how to prevent future ones.

Phase one of the DOE project — to survey and assess the severity of the problems at its defense production facilities, including the weapon labs — is well under way. Later phases will include detailed testing and sampling of suspected problem sites and remedial cleanup of the sites that need it.

The *Preliminary Summary Report* lists existing and suspected problems, along with situations that may result in future problems.

The summary report ranks 155 existing and potential problems at 16 DOE NWC facilities. Sandia accounted for nine of these problems — four at SNLA, two at SNLL and three at TTR. Four other problems linked to the Labs involved other DOE-funded entities that were listed under Sandia to simplify reporting.

Most Sandia Problems Not Severe

DOE produced the summary report by distilling information from individual environmental reports that it produced on each major NWC facility (including Sandia), which were released earlier in 1988. The summary report does not discuss many of the relatively minor problems that were discussed in the facility-specific reports. (The Sandia-specific report included 46 potential problems. Some of these were not included in the summary report, and some were combined.)

The most severe problem in the summary report



GLORIA CHAVEZ MILLARD (3202) uses radiation detector to check the integrity of stored drums of low-level nuclear waste awaiting disposal.

was ranked 1, the second most severe 2, on down through 155. Sandia's highest-ranking problem was ninth. Ironically, this ranking may be based on erroneous data and could be changed (see "Lagoons").

In general, Sandia's problems are not considered to be severe. As the report states, "Most ranking units for SNL rank extremely low due to the low mobility or, in a few instances, small quantities of

the contaminants."

Some other NWC environmental problems are discussed in the report, but not ranked — for one or more reasons: More data were needed, more time was needed to allow samples to be examined, or the problem did not lend itself to ranking. Four of these are mentioned in the summary of Sandia's suspected problems that follows.

"Key words to keep in mind are 'suspected' and 'potential,'" explains Gordon Smith, supervisor of Environmental Protection Div. 3202. "The report discusses some NWC problems that are openly recognized. But it discusses many more *suspected* problems that have *potential* for environmental damage and danger. DOE environmental survey teams spent only one to three weeks compiling information at most NWC sites, so they certainly aren't making definitive statements about the sites and situations in this report.

"The teams simply produced an inventory of *all* sites and situations that *may* be environmental problems or that may become problems in future years," Gordon continues. "The teams made no attempt to produce a balanced report, and the report makes it clear that a moderate or significant number of assumptions were made in most cases. If they had doubts about a site or situation, they probably assumed the worst.

"This is no criticism of DOE's approach," he adds. "Some people have accused DOE of minimizing — even hiding — its problems in the past. I think the survey teams made a good-faith attempt to be open and honest about all potential environmental problems, including some that may be insignificant. Report readers should understand that some sites may not require any cleanup at all."

Sandia's ES&H Record, Philosophy

Although ES&H is headline news these days, there is nothing new about Sandia's efforts in the field, which date back nearly 40 years.

"We've always worked to keep Sandia a safe and healthy place to work, and we've also attempted to conduct our work in a way that protects the environment," says Bill Burnett, Health and Safety Dept. 3210 manager.

"This isn't just my philosophy — it comes from the top levels of Sandia management and has for a long time," Bill continues. "Less than a year ago, President Welber sent out a memo about our new ES&H manual to all supervisors. His memo had one statement in all-capital letters: 'NO JOB IS SO IMPORTANT THAT IT MAY BE PERFORMED WITHOUT DUE REGARD FOR SAFETY AND RESPECT FOR THE ENVIRONMENT.' That short statement sums it up. It's how we've tried to operate for years."

Given the full benefit of hindsight and today's heightened environmental, safety, and health awareness, Bill acknowledges that Sandia would do some things differently than in the past.

"But," he says, "we have always operated

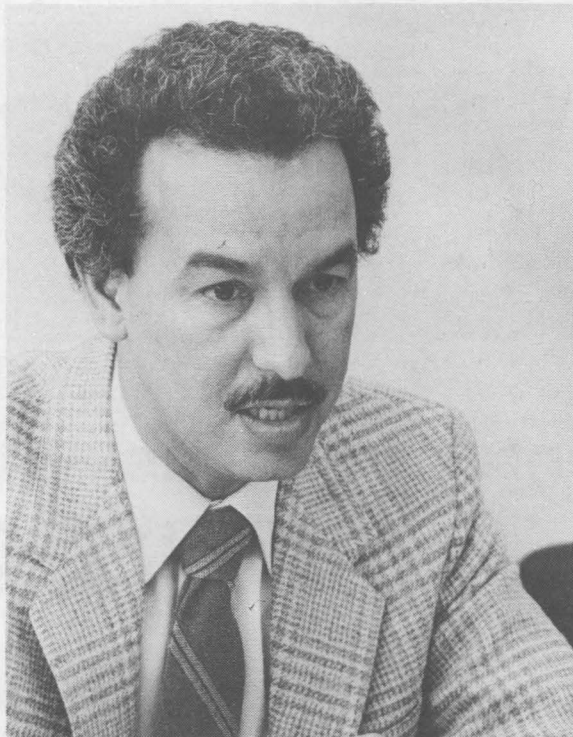
within the rules of the times. Today, we're all more knowledgeable and sophisticated in our approach to ES&H matters. We're much more cautious, and we carefully consider the consequences of our actions before acting."

ES&H Director Nestor Ortiz (3200) says Sandia will continue to be open about potential problems at the Labs: "We will not hide our problems behind our fences. Our staff has long cooperated with city, state, and federal ES&H officials, who are regularly escorted inside to inspect our facilities.

"If we're working on anything classified," Nestor says, "we simply put it away and take the inspectors where they need to go. That has never been a big problem."

"In line with that, I want to point out that Sandia is not hiding any environmental skeletons in the closet," says Environmental Protection Div. 3202 supervisor Gordon Smith. "It's always possible that we could discover problems that we don't know about today, but we have been very methodical in our attempts to find all of them. Every major potential problem site we have is now public knowledge. There just aren't any more that we know about."

(Continued on Page Two)



"I CAN ASSURE our employees and everyone in our surrounding communities that we take our responsibilities very seriously," says Nestor Ortiz, Director of Environment, Safety, and Health 3200. "We'll never ignore a problem that threatens the health or safety of our employees or our neighbors."

(Continued from Page One)

DOE Report

DOE's final summary report will be expanded to cover all major DOE operating facilities and is scheduled to be published this fall. The final report could drop some suspected problems discussed in the preliminary report if the facilities can show that they are not serious problems.

So, what does it really mean for Sandia? Do we have major problems? If so, what will be done about them, and how will solutions be financed? These questions can't be answered completely now, but Sandia is searching for the answers, in cooperation with DOE.

Some SNL sites may indeed require remedial work, but some suspected problems in the DOE summary report will likely prove to be minor and require little, if any, action (see "Our Environment: How Much to Pay for Cleanup?").

"We believe some problems discussed in the report [under 'Liquid Spills and Discharges'] are just nuisance-type situations — minor and insignificant problems in some of our remote areas — and are no great threat to the environment," says Jim Phelan of Environmental Protection Div. 3202. In quite a few cases, the problems are simply relics from the past when cleanup procedures were less stringent.

"We simply didn't have data either to confirm or to rebut the existence of contamination at these sites," Jim continues. "That's why they are included in the report and why we must evaluate them."

The main concern at these sites is the potential for groundwater contamination, but Sandia considers that possibility unlikely because the water table in most SNLA areas is about 450-500 feet below the surface.

Sandia Not Ignoring Problems

"The fact that we think some of the suspected problems in the report are minor certainly doesn't mean we're ignoring them or resisting cleanup actions," says Nestor Ortiz, Director of Environment, Safety, & Health 3200. "In fact, we have already done remedial cleanup of several sites identified by the DOE Albuquerque Operations Office's Environmental Restoration Program, which began several years ago.

"Some recent media reports have quoted people who are saying environmental problems are endangering employees at DOE facilities," Nestor continues. "We have no evidence indicating that any Sandia sites pose any hazard to life or health. I can assure our employees and everyone in our surrounding communities that we take our responsibilities very seriously. We'll never ignore a problem that threatens the health or safety of our employees or our neighbors."

So, what's the next step? "Right now, we're preparing a response to the findings in the preliminary report," Nestor says. "We think it will help DOE determine which of our sites to include in the final summary report. After it's issued and the project advances through its final phase, DOE will eventually determine which sites and situations [throughout the NWC] need attention first, which ones need attention but can wait a while, and which ones aren't really problems."

This evaluation phase of the comprehensive DOE project is currently scheduled for completion in 1993. Environmental restoration activities are expected to continue well into the next century — to 2008 at Sandia, longer at some other DOE facilities.

Could Cost Billions Nationwide

It's not simply a matter of DOE's determining which sites and situations need fixing. There's the matter of money — big money. Exactly how much can't be determined now, but several recent DOE reports have estimated that it will cost billions of dollars to evaluate its facilities, clean up problems, and allow the facilities to comply with current and expected regulations.

Former Secretary of Energy John Herrington released a report on Jan. 5 estimating that \$53 billion to \$92 billion (in FY90 dollars) could be required over a period of years for necessary actions at 45 DOE facilities and four special-project sites. The facilities include Sandia and the Inhalation Toxicology Research Institute (ITRI), also located on KAFB.

A separate report, *Environmental, Safety, and Health Needs of the U.S. Department of Energy*, estimates that \$100 billion to \$200 billion could be required for cleanup, for rebuilding some DOE facilities, and for ensuring that regulations are met. This report — often called the "Glenn Report" — was prepared by DOE at the request of US Senator John Glenn and issued Jan. 19. (See "Cleaning Up Sandia — How Much Will It Cost?")

Partly in response to the heightened interest in — and importance of — these issues, Sandia formed the Environment, Safety, and Health (ES&H) Directorate late last year (LAB NEWS, Dec. 23, 1988). More important, the new organization will strengthen internal coordination in this area and provide more resources to develop solutions to genuine problems.

Improving Public Understanding

The new directorate will also work to improve public understanding of Sandia's environmental sit-

Putting Estimates Into Context

Cleaning Up Sandia — How Much Will It Cost?

How much will it cost to evaluate potential environmental problem sites at Sandia and clean up the ones that need it? "A simple question, but it isn't possible to give a precise figure right now," says recently named ES&H Director Nestor Ortiz (3200). "At this point, we recognize some sites may require cleanup, but until site evaluation activities are completed several years from now, we won't know for sure which ones need to be cleaned up and how much cleaning they will need.

"However, in cooperation with the DOE Albuquerque Operations Office, we prepared estimates that are used by DOE in the 'Glenn Report' [see main story] to project total costs for all DOE facilities."

DOE took Sandia's estimates, projected them over a 20-year period, and estimated in the Glenn Report how much funding the Labs would need to operate the *total ES&H program, not just to clean up environmental problems*. DOE estimated that Sandia Albuquerque would need \$486 million to \$531 million to operate its ES&H program, clean up environmental problems, and meet existing and new ES&H regulations through 2010; the figures include the Tonopah Test Range (TTR) in Nevada. Sandia Livermore's total ES&H program costs are projected to be \$89 million to \$105 million over 13 years.

Totaled for SNLA, TTR, and SNLL, the estimates range from \$575 million to \$636 million — the higher figure based on a more-extensive cleanup.

The figures assume that some cleanup will be necessary at each Sandia site mentioned in the DOE *Preliminary Summary Report* (see main story). Nestor says that's a big assumption: "Once we know for sure which sites actually need remedial action, we'll have a much better idea about the costs."

Estimates Include 'Base' Activities

When costs are quoted, a key point is often missed: Most of the funds to be expended are not for actual cleanup work, but for the Labs' regular ("base") budget for ES&H activities.

In FY89, for example, this budget will

total about \$18 million and will be spent on such base-program items as ES&H employee salaries/benefits; regular sampling, testing, and monitoring programs; waste packaging/handling activities; and training and planning programs.

Most of these items and activities would be funded regardless of the special cleanup program. And there would be some future growth in these expenditures even without the cleanup program, for example, to ensure compliance with new DOE orders and regulations.

"Early media reports describe the \$486 million to \$531 million estimate for Albuquerque and Tonopah as being for 'cleanup,' but this isn't the case," says Nestor. "Cleanup, or remedial action, amounts to about \$175 million of the sum. The balance is to manage our ES&H program correctly to ensure the ongoing protection of our employees, contractors, and the public."

The Glenn Report is a "worst-case" report that assumes remedial action will be required at all suspected problem sites. "We think it's unlikely that all sites will require remedial cleanup action, although that was assumed in the report," says Nestor. "Therefore, we believe our actual costs could be significantly less than the Glenn Report estimates."

Sandia's ES&H cost estimates are generally one-third or less of those at the other weapon labs and production facilities. A main reason is that Sandia's work is primarily concerned with engineering aspects of weapons and with energy programs. This work does not involve routine processing of extremely hazardous materials, such as plutonium and enriched uranium, which pose significant handling/processing difficulties that can translate into high cleanup costs.

The Glenn Report cost estimates for the weapon labs: Sandia (all facilities), \$575 million to \$636 million; Lawrence Livermore, \$1.24 billion to \$1.48 billion; Los Alamos, \$2.85 billion to \$3.38 billion. All of these estimates are for total ES&H program costs, not just environmental cleanup. The cleanup activities are estimated to take up to 20 years at Sandia, 26 years at Los Alamos, and 50 years at Lawrence Livermore.

(Continued on Page Three)

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uation, according to Dennis Roth, Vice-President of Administration 3000. "There's much more attention focused on the DOE facilities' environmental problems than ever before," he says, "attention by the media, by the public, and by special-interest groups."

"By coordinating our external relations more effectively in this area, we hope to improve the accuracy of what's printed, broadcast, and otherwise communicated about us. We want the public to understand our true situation and realize that we are being open and honest about it."

Establishment of the new 3200 directorate doesn't mean the Labs is just beginning to examine its environmental situation or that it previously ignored ES&H problems. Sandia formed its first safety group in the late '40s, soon after Sandia opened. And former ES&H Dept. 3310 operated within the medical directorate for many years until the recent reorganization.

The new 3200 directorate does mean that Sandia ES&H concerns will receive increasing attention. (See separate story, "ES&H Helps Protect . . .," concerning the directorate's continuing and planned programs.)

Summary of Sandia's Suspected On-Site Environmental Problems

Below are brief descriptions and status reports about eight of the nine ranked Sandia "problems" discussed in the DOE report. (See "Lagoons" for the other one.) The Hazard Potential Index (HPI) number listed for each site — assigned by the DOE environmental survey team — is "based on a calculated risk to potentially affected populations."

HPI numbers were generated for comparison purposes only and do not indicate absolute risk. HPI numbers 8 through 10 reflect environmental problems of most concern from the perspective of potential public hazard (Sandia has none in this category). Numbers 6 and 7 indicate problems representing a secondary level of concern; 4 and 5, a tertiary level; 1, 2, and 3, problems characterized as posing a potential health risk at levels well below those used in regulatory decisions; 0, problems that are not expected to pose a hazard to health.

An HPI number of 0 (zero) doesn't mean the DOE survey team determined that a federal site is not a potential problem — simply that the team found it *unlikely* that populations would be affected by the site. Some sites listed in the final summary report (including ones rated with HPI 0) eventually may have to undergo remedial treatment if Sandia cannot determine (through sampling and testing) that they are environmentally harmless.

The rank number after the HPI number indicates the relative severity of the potential problem in relation to all 155 ranked items in the DOE *Preliminary Summary Report*. As mentioned earlier, some problems were not ranked for a variety of reasons.

Also mentioned earlier, several of the problems have already been solved (the DOE survey teams compiled their information in 1987), so some may not remain in the final summary report if DOE finds the solutions acceptable.

Sandia Albuquerque

- *Liquid Spills and Discharges*, HPI 3, Rank 77 — Spills and discharges of oil and other chemicals have occurred throughout the years at numerous Sandia locations. Sandia officials believe none of these sites poses an imminent threat to the environment because most spills/discharges involved relatively small volumes of low-volatility compounds. Sandia completed an assessment of these sites in 1987. A site evaluation program that begins this summer will determine whether unacceptable contamination exists. Sandia will take remedial action if it does.

- *Liquid and Solid Chemical Waste Landfill*, HPI 0, Ranked twice — 127 for liquids and 143 for solids — Located in a remote part of Tech Area III, the now-inactive landfill received liquid and solid

A Growing Environmental Program

Busy Staff Evaluates Environmental Concerns

Although Sandia's staff size has remained relatively constant during the past five years, one group has grown substantially — Environmental Protection Div. 3202. In 1983, it had two staff members; now it has 13 full-time equivalents (FTEs), and they stay busy.

In general, this rapid growth reflects increasing government and public concerns about the environment. In particular, it reflects growing environmental concerns at DOE's Nuclear Weapon Complex facilities.

It also responds to the recent proliferation of environmental acts and regulations — federal, state, and local — that must be complied with by the Labs. On the federal level alone, there are now more than 25 environmental laws that apply directly to Sandia's activities. Related monitoring, sampling, inspection, and reporting requirements are numerous and time-consuming.

Possibly the most time-consuming task at Sandia in the past few years has been the project to discover, review, and catalogue all potential environmental problems. Encouraged and funded by DOE, it's part of a process to compile a comprehensive list of real and suspected environmental problems throughout DOE and

estimate how much it will cost to remedy the problems (see main story).

"A lot of resources and effort have gone into this project," says Dennis Roth, Vice-President of Administration 3000. "Our environmental staff conducted extensive interviews with current and retired employees and studied numerous records to ensure that we developed a complete list of suspected problems and located the problem sites. Since then, the staff has spent much time studying the sites, compiling information about them, and getting that information to DOE."

Dennis says the project, even though tremendously time-consuming, has a high payoff. "I don't want to minimize our problems, but we now know that many of the identified sites are not really problems. In fact, we believe we have nothing that poses any immediate threat."

"We feel very fortunate because it's clear that we have nowhere near the scope and scale of environmental problems that apparently exist in other parts of the weapon complex. In many respects, this is a testament to the way this laboratory has been run for many years."

chemical wastes from 1962 until late 1985. Wastes were disposed of in unlined trenches, dug about 10 to 20 feet deep, then filled with soil. The site contains an estimated 22,500 cubic yards of waste and contaminated soils. All trenches and pits were covered with soil after the landfill was inactivated. Sandia completed a new groundwater-monitoring system around the landfill in November 1988 and is working with the New Mexico Environmental Improvement Division (EID) on a groundwater-monitoring plan.

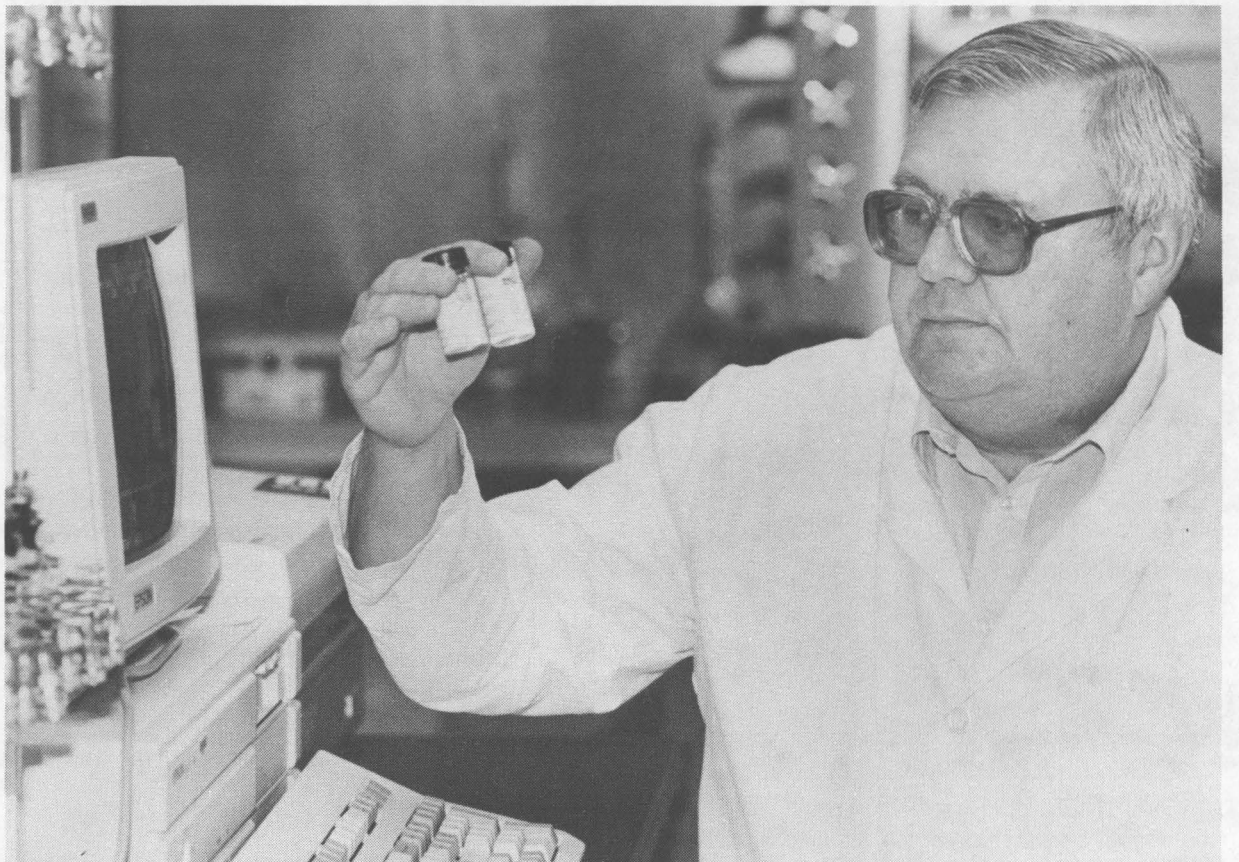
- *Low-Level Radioactive Waste Landfill*, HPI 0, Rank 137 — The 2.6-acre site is located in Tech Area III, about eight miles south of the Albuquerque city limits; it opened in 1957 and is scheduled to close before the end of 1989. When the landfill is closed later this year, no more radioactive waste burial is planned at Sandia. These wastes will be packaged and shipped later to approved low-level waste dis-

posal sites. An inactive one-third-acre site was operated until 1959 in Tech Area II; it consisted of trenches covered with backfilled soil that were capped with concrete when the site was closed. These disposal facilities are subject to regular radiation monitoring and soil/vegetation sampling.

Sandia Livermore

- *Diesel Fuel Oil Leak*, HPI 6, Rank 28 — In 1975, a punctured line to a 180,000-gallon reserve fuel tank on the southwest side of SNLL released 59,500 gallons of diesel fuel into the soil. The tank, containing fuel for an electric generator, was installed earlier in 1975 after Pacific Gas & Electric, reacting to the 1974 "energy crisis," told Sandia that power could be cut off if shortages developed. While installing a grounding rod near the tank, a contractor punctured a fuel line, and the resulting leak was

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CHARLES GRAY (3211) gets ready to check waste-oil samples on a mass spectrometer in the environmental health chemistry lab. All waste oils are routinely checked for hazardous chemicals before the oils are sent to recycling or disposal firms.

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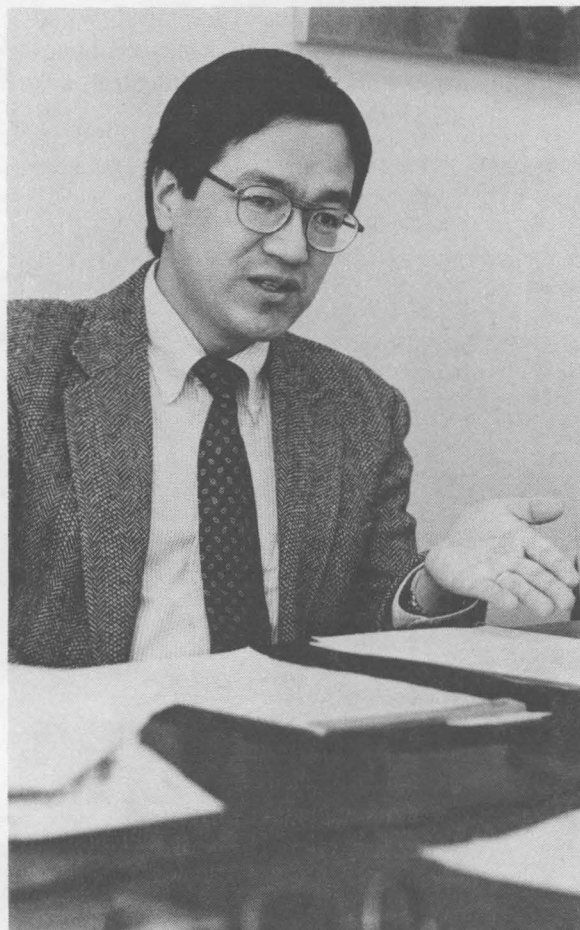
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not discovered for 10 days. Monitoring wells have been installed around the spill site and in the direction of groundwater flow. Some benzenes have been found in groundwater on an irregular basis, but in minuscule amounts — very close to the detection limits of this chemical. The water table is about 110 feet below the surface; there are no water wells near the point of contamination. Sandia and the State of California continue to monitor the groundwater for contaminants. DOE is conducting a feasibility study to determine whether — and how — the site should be cleaned up; it should be ready this fall.

- **Former Fire Extinguisher Training Area, HPI 0, Rank 136** — During the '60s and up to the mid-'70s, gasoline and waste solvents were periodically poured on the ground in quantities of three to four gallons and burned for fire-extinguisher training. Surface soil contamination was not considered at the time because the fuel constituents were thought to burn completely. Since 1978, the gasoline has been poured into metal pans. Neither soil nor groundwater contamination has been confirmed at the site, and the site is not located near any wells. Further tests are under way to determine whether soil and groundwater contamination exists.

Tonopah Test Range

- **Photochemical Effluent, HPI 3, Rank 66** — Effluent from a photoprocessing lab at TTR's Tech Area III has been piped into an open-bottomed leaching pit designed to allow liquid wastes to percolate into underlying soils. Effluents contained potential contaminants, including silver. DOE's survey team believed this could contaminate groundwater and cited the fact that the pit is near the well (about 1000 feet away) used as a source of drinking water for TTR personnel. Sandia considers the contamination possibility unlikely because the water table is about 400 feet below the surface. TTR has eliminated future threats from photochemical effluents by routinely recovering silver from the photochemicals before they are piped into the pit. DOE's Albuquerque Operations Office has prepared a preliminary assessment of the site and will soon begin remedial investigation activities at this and other TTR high-priority sites.



"SANDIA IS NOT hiding any environmental skeletons in the closet," says Gordon Smith, supervisor of Environmental Protection Div. 3202. "It's always possible that we could discover problems that we don't know about today, but we have been very methodical in our attempts to find all of them."



INHERITED PROBLEM — Sandia Livermore bought this property — the former Trudell's gas station/auto-repair shop — so the land could provide a security buffer zone on SNLL's west side. Soil contamination from oil spills on the site was identified before the purchase. Under the sales agreement, Sandia will clean up the site and receive a sales-price adjustment.

- **Leaking Oil Drums, HPI 2, Rank 85** — A large amount of used oil in drums (including some that were leaking) had accumulated over a period of years at TTR. This problem has already been solved. The used oil was removed from TTR by a licensed waste-disposal contractor after sampling and analysis confirmed that the oil did not contain hazardous chemicals. The empty drums and visibly contaminated soil from the storage area have been disposed of in accordance with applicable regulations.

- **Plutonium Pollution Sites, HPI 0, Rank 141** — Three areas at TTR have low-level plutonium contamination resulting from non-nuclear explosion tests conducted there in 1963 by the Department of Defense and the Atomic Energy Commission (now DOE). The areas are double-fenced and posted with radiation safety signs. DOE does regular radiation monitoring of the sites, and the fences are checked

and maintained by Sandia. The sites are not considered to be dangerous for a variety of reasons: low plutonium contamination levels, slow plutonium soil-migration rates, secured sites in a remote TTR area far from populated areas, and the fact that TTR is off limits to the public and is patrolled constantly by a substantial security force. Also, the water table is about 400 feet below the surface, precipitation is about five inches per year, and the evaporation rate is high.

Unranked Problems

Other Sandia environmental concerns cited in the *Preliminary Summary Report*, but not ranked, include underground storage tank problems, orphaned chemicals, and potential PCB releases at Sandia Albuquerque and an Area III landfill at TTR.

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'Extremely Difficult Questions'

Our Environment: How Much to Pay for Cleanup?

Environmental issues can get heated and emotional. Most citizens are concerned about the environment today and generally agree that some environmental problems and hazards should be cleaned up.

But disagreement can easily develop when some basic — but tough — questions are asked: How clean is clean enough, how much are we willing to pay for cleanup, and how much risk are we willing to assume if we don't clean up a particular problem?

"These are extremely difficult questions," says Gordon Smith, supervisor of Environmental Protection Div. 3202. "No reasonable person would argue against cleaning up severe hazards. But even problems that turn out to be minor can be difficult and costly to monitor and evaluate, let alone fix."

Gordon says a prime example is the new water-monitoring system of four wells and associated equipment that Sandia completed late last year around the now-inactive chemical waste landfill. Installed in response to a New Mexico Environmental Improvement Division notice of violation that an existing monitoring system was inadequate, the new system allows samples to be taken from the water table below the landfill.

Expensive to Install and Operate

The system cost about \$750,000 to install and will cost about \$30,000 a year to operate. And this system is for a situation assigned a Haz-

ard Potential Index (HPI) number of 0 by the DOE environmental survey team. That basically means the problem is *not expected* to reach populations.

"Many sites — public and private — have suffered minor environmental damage but aren't really threats and don't justify huge cleanup costs," says Gordon. "There are also some situations that just can't be cleaned up completely. A prime example is the air quality in big cities. As long as we drive cars, heat homes, and run industry, there's bound to be some air-quality degradation. No matter how much money is spent, there's no current, practical way to make the air in Los Angeles as clean as that in a pristine northwoods forest."

"At Sandia, we are now trying to determine which sites and situations truly need remedial action and which don't," says ES&H Director Nestor Ortiz (3200). "We want to eliminate any real threats, but we also want to avoid spending huge sums to fix minor problems that don't threaten anyone or anything."

The important points now and in the future, Nestor says, are to be increasingly cautious and careful with our environment, determine beforehand that our actions won't cause unnecessary damage, use existing environmental protection technology to full advantage, and continue developing new technology that will enable us to minimize hazardous waste production and help us to protect the environment better.

(Continued from Page Four)

- *Underground Storage Tanks*, HPI 3, Not Ranked — Sandia currently uses 59 state-EID-registered steel underground storage tanks, with capacities ranging from 120 to 25,000 gallons. Most contain fuel oil, transformer oil, gasoline, or diesel fuel. Another 30 Sandia underground tanks are no longer used and have been abandoned. No problems are known to exist with any of the tanks, active or abandoned. However, about 75 percent of the tanks are more than 20 years old, and half are probably about 35 years old. A new program has already begun to regularly inspect active tanks, identify active tanks that aren't needed, and remove abandoned and inactive tanks.

- *Orphaned Chemicals*, HPI 1, Not Ranked — Several drums of abandoned chemicals at SNLA were identified by the study team. Sandia believes that this problem was solved in late 1987. Chemicals have been collected, handled as hazardous waste in accordance with regulations, and removed from the Labs.

- *Potential PCB Releases*, HPI 0, Not Ranked — Like many institutions, Sandia has routinely used utility transformers that contain polychlorinated biphenyl (PCB) insulating oils that are now considered harmful. The Labs is in the process of replac-

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A DRAFT of Sandia's response to DOE report on suspected environmental problems is reviewed by Dennis Roth (left), Vice-President of Administration 3000, and Nestor Ortiz, Director of Environment, Safety, and Health 3200.

Lagoons: Confusing Environmental Problem

Two lagoons (now dry) located on KAFB that were formerly used to water the KAFB golf course have become a confusing problem. The team that produced DOE's *Preliminary Summary Report* surveying suspected environmental problems at Sandia (see main story) believed the Air Force lagoon problem could in part be Sandia's responsibility and its most severe problem. In fact, the DOE team ranked it as potentially the ninth most severe problem in the entire Nuclear Weapon Complex (NWC).

Sandia environmental officials say no one knows for sure if a problem really exists, but efforts are now under way to clear up the confusion. As part of a larger study to assess several KAFB sites, the Air Force has hired the US Geological Survey (USGS) to work with the KAFB environmental contractor to determine whether there is a problem and, if so, whether it's serious.

A bit of background on the problem: Concerned about a supply of irrigation water for its on-Base Tijeras golf course in the early '60s, Kirtland built two side-by-side lagoons about one-fifth mile north of the current Air Force Trestle facility. The lagoons, about 7 acres each and 5 to 6 feet deep, are unlined but have concrete walls to help prevent bank erosion. They are located next to a sewer line running to the City of Albuquerque's treatment works. The line carries waste water from Sandia's Tech Area I, and from several Air Force facilities — shops, a housing area, and base recreation buildings.

A valve was installed on the waste-water line to divert much of the flow to the lagoons before and during the hot, dry season. During this time, water typically stayed in the lagoons about 38 days to allow natural biological action to clean it somewhat. The water was then pumped to a golf course pond for irrigating the course. (During part of the winter, the valve to the lagoons was closed, and all waste water flowed to the city treatment facility.)

Two KAFB water-supply wells are located about 1000 and 2000 ft away from the lagoons. The water table is estimated to be about 400 feet below the surface.

In a spring 1987 test, State of New Mexico Environmental Improvement Division (EID) investigators found chemical contaminants in lagoon samples. Based on the samples, an EID inspector estimated the lagoons contained 1400 gallons of 1,1,1-trichloroethane (methyl chlo-

roform) — a colorless liquid solvent commonly used for cleaning instruments and degreasing metals. Early in 1988, the EID acknowledged that a decimal error had been made, and said the correct estimate was 1.4 gallons — not 1400.

Possibly based in part on the *original estimate*, the *Preliminary Summary Report* ranked the lagoons the ninth worst environmental problem in the entire NWC and assigned it a Hazard Potential Index (HPI) number of 7 (10 is worst — see main story for explanation of HPI numbers). The report also mentioned the presence of at least one other hazardous chemical in the EID samples, but it was detected in an amount too low for accurate measurement and was not in violation of waste-water standards.

Today the lagoons are completely dry. The Sandia liquid waste — tested regularly to see that it meets city standards — now flows directly into the city's waste treatment system. "Concern that wells might eventually suffer chemical pollution from the lagoons is certainly natural," says Environmental Protection Div. 3202 supervisor Gordon Smith. "But we honestly believe this is an extremely remote possibility.

"Our state EID acknowledges that its decimal error contributed to a huge overstatement of the amount of trichloroethane estimated to be in the lagoons, and an electrical conductivity test conducted by DOE in August 1987 supported the belief that no downward migration of fluids was occurring beneath the lagoons."

In addition, water samples taken from the lagoons by Sandia and KAFB investigators later

in 1987 showed trichloroethane levels ten times lower than those found by the EID. Further, these investigators were unable to identify sources of significant pollutants from the Labs.

DOE May Rerank Situation

DOE's Albuquerque Operations Office has asked the survey team to rerank the lagoon situation, based on the EID error and the additional information. This could change the picture significantly.

Currently, the USGS plans to drill four water-monitoring wells around the lagoons to establish the exact depth of the water table and determine its slope. USGS also plans to take soil samples from the dry lagoon beds and core samples (both shallow and deep) from beneath the lagoons to determine whether they contain significant levels of heavy metals or solvents and, if so, whether these are migrating toward the water table. If there is a severe problem, USGS will help shape a remedial action plan. If DOE downgrades the matter, some of the planned action may not be necessary.

In the meantime, Sandia continues to monitor its sewage before it reaches the city treatment plant. Gordon says the sewage consistently meets city discharge standards. Under guidelines put into effect in 1986, only a few chemicals (in amounts less than four ounces) can be disposed of through the sewer system. Other chemicals are collected in Sandia's laboratories for disposal as hazardous waste through approved procedures.



GARY YEAGER (3202) surveys the now-dry Kirtland lagoons that may have suffered some chemical contamination. The US Geological Survey is working with the KAFB environmental contractor to determine whether the problem at this site might be serious.

Excellent Record**ES&H Helps Protect Sandians, Environment**

SANDIA HAS "always operated within the rules of the times," says Bill Burnett, manager of Health and Safety Dept. 3210. "Today, we're all more knowledgeable and sophisticated in our approach to ES&H matters. We're much more cautious, and we carefully consider the consequences of our actions before acting."

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ing all PCB oils in utility transformers with non-PCB insulating fluids. By the end of 1988, oil had been replaced in transformers in 18 buildings; the oils in all Sandia transformers should be replaced by the end of 1990. An inventory of other PCB items has already been completed. Sandia disposes of PCB oils through commercial firms approved by the EPA, and all Sandia waste oils are now sampled for PCBs and other contaminants before disposal. Uncontaminated oil is sent to commercial recyclers.

● **Soil Contamination Areas, HPI 2, Not Ranked** — Between 1953 and 1985, most wastes (including some chemicals) from TTR operations were disposed of in a landfill near TTR's Area III. The landfill is unlined, and there is a possibility that some wastes could leach downward and enter the groundwater supply. Sandia considers this unlikely because the water table is about 400 feet below the surface, precipitation is about five inches per year, and the evaporation rate is high. Also, there is little downward movement of water in the area's soils.

Sandia inherited another problem at Livermore when it purchased the former Trudell's gas station/auto-repair shop for a security buffer zone. Not investigated by the DOE environmental survey team during its 1987 inspection, which came before the purchase, Trudell's could show up in an updated version of the report or in other environmental reports.

Soil contamination from oil spills on the site was identified before the purchase. The sales agreement calls for Sandia to clean up the site — about 1000 feet west of Sandia Livermore's west parking lot — and receive a sales-price adjustment in return. Cleanup efforts will begin after Sandia's plan is approved by the California Regional Water Quality Control Board.

●LP

The "E" of ES&H — Environment — is getting much of the press these days, but not to be forgotten is Sandia's excellent record in safety and health, the "S&H."

Back in 1960, the AEC (a predecessor of DOE) awarded Sandia a trophy for setting a new AEC record of 12,822,170 employee-hours worked without a disabling injury. (When the streak ended, it had reached nearly 15 million hours.) At about the same time, Sandia Livermore, which started operating in 1956, received the AEC's Award of Honor for 3,000,000 employee-hours without a disabling injury or lost-time accident.

In more recent years, according to statistics issued by DOE, Sandia has a substantially lower injury rate than that averaged by DOE and all its contractors.

The five-year average for DOE and all contractors from 1983 to 1987 was 2.2 recordable injuries per 200,000 hours worked. During those years, Sandia's rates were 1.2, 1.4, 1.6, 1.4, and 1.0. Through the first three quarters of 1988, Sandia's rate was 0.8.

National Safety Council statistics for all industries show an injury rate of 6.5 per 200,000 hours from 1983 to 1987. The 200,000-hour base is equivalent to a year's work for about 100 persons.

Recordable injuries do not include minor ones that require simple first-aid treatment (small cuts, for instance), but they do include any work-related injury or illness that results in medical treatment or lost work time. As with the injury rate, Sandia's rate

of lost workdays is well under that of DOE and all its contractors.

Another measure is the DOE-published "Injury Ranking of Research Contractors." That report for 1988 (through the third quarter) lists 33 contractors, including six national laboratories. Sandia is ranked about halfway down the list, at number 16. But when compared with the five other national labs, Sandia is second from the top. That's consistently been Sandia's position at least since 1981 — except for 1984, when we moved up a spot and were best among the national labs.

But there's something missing in an assessment based solely on injuries and illnesses, as is pointed out by Don Rost, supervisor of Safety Engineering Div. II (3216): "It's a negative measure. They don't report positive figures. It's not necessarily an accurate reflection of the whole safety program."

Not Resting on Record

So, good as its record may be, Sandia isn't resting there. Formation last December of a new directorate — Environment, Safety, and Health 3200 — puts even more emphasis on Sandia's intention to continue paying full attention to all aspects of ES&H.

"We needed a more coordinated effort across the Laboratories," explains Dennis Roth, Vice-President of Administration 3000. "The new directorate provides some of the cohesiveness necessary for the development and orchestration of Labs-wide

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Single Best Thing We Can Do**Minimizing Hazardous Waste Is Goal of New ES&H Director**

Minimizing hazardous waste production is possibly the single best thing Sandians can do to protect the environment and to ensure that we don't create costly problems in the future. That's the opinion of Nestor Ortiz, recently named Director of Environment, Safety, and Health 3200, and it's one of his primary goals.

"The less we produce, the less we have to dispose of," he says. "It's much like our personal health — it's cheaper in the long run to stay healthy than it is to cure our ailments if we don't keep fit." Curing environmental ailments certainly isn't cheap (see "Cleaning Up Sandia — How Much Will It Cost?").

In years past, Sandia disposed of some types of chemical and low-level radioactive wastes in special remote-area landfills. Some of these landfills may have to undergo remedial cleanup, but that may not be determined for some time (see main story).

Hazardous chemical wastes are now collected and packaged for shipment to EPA-approved disposal sites. Wastes are collected at various Sandia facilities, then packaged and stored for later shipment at the Hazardous Waste Management Facility (HWMF) — Bldgs. 958 (storage) and 959 (packaging).

The specially fenced facility, located south of Area I, began operating in February 1988 (LAB NEWS, June 17, 1988). It handles about 4000 chemical species a year (10,000 individual items) and costs about \$1.3 million a year to operate, including fees paid to firms that haul the packaged wastes away and dispose of them.

These fees are high — tremendously high in some cases. Gordon Smith, Environmental Protection Div. 3202 supervisor, says the hauling/disposal fees for a 55-gallon drum of hazardous

waste range from \$200 to \$10,000, depending on the exact type of waste. The \$10,000 fee applies to reactive-metal wastes, such as lithium and sodium.

Phyllis Pei (3202) explains why disposal fees are so high for lithium and sodium: "These wastes are quite dense — about 600 pounds per 55-gallon drum — and are extremely reactive. The wastes must undergo six separate chemical-treatment steps before they are rendered harmless."

"The disposal firms must exercise utmost caution when handling and processing such materials because they can ignite violently if exposed to moisture or even air. The firms must purchase and maintain a lot of expensive equipment to do this dangerous job, and their insurance premiums are almost unbelievably high."

Phyllis says Sandia now spends about \$200,000 a year to dispose of reactive-metal wastes alone.

"That's a prime example of why we need to keep our waste production to a minimum," says Nestor. "Our ES&H staff will be working with Sandians in various ways to encourage less hazardous waste production — for example, consulting with staff and supervisors to encourage use of fewer toxic materials. We will also be instituting treatment procedures to reduce the volume of hazardous waste before it goes to disposal firms, and planning alternative operating methods that don't generate as much hazardous waste."

A separate Mixed Waste Storage Facility is being built west of the inactive chemical waste landfill in Area III to package and store mixed radioactive and chemical wastes. It should become operational late this summer. It may cost another \$1.2 million a year to operate.

(Continued from Preceding Page)

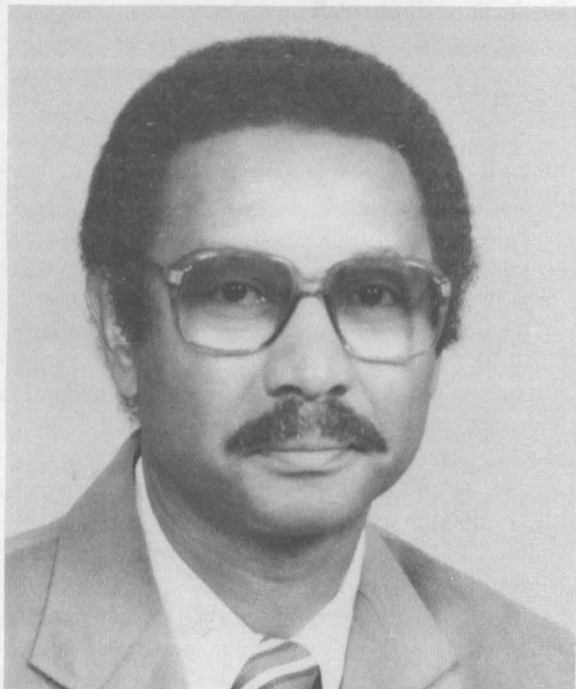
ES&H programs.”

ES&H 3200, currently staffed by about 65 persons, is headed by Nestor Ortiz. Within the directorate are Environmental Protection Div. 3202 (formerly 3314) and Health and Safety Dept. 3210 (formerly 3310).

Still being formed is an ES&H Planning Staff. Dennis explains: “This group will, with the assistance and support of our line groups, continue an extensive Labs planning activity that began last year at DOE’s request and led to initial assessment reports.

“We’re in the process of updating and refining the detail of those reports — refining the definition of some of the challenges we face, as well as the associated estimates of the costs,” says Dennis. “The ES&H Plan is the centerpiece. It will drive our ongoing commitment to protect the environment. The Planning Staff will also support our SHEAC Council” (more on the SHEAC Council later).

Sandia Livermore will continue to have its own Hazards Control Div. 8514, supervised by Bill Ormond. Although Livermore and Albuquerque follow the same general ES&H guidelines and orders, there are some differences in operations. For instance, Bill points out, “Our major responsibility is the tritium research lab. And California is more aggressive



BILL ORMOND supervises Sandia Livermore's Hazards Control Div. 8514. The division operates independently of the Sandia Albuquerque ES&H group, but the two organizations work cooperatively and share information.

than most states when it comes to the environment, so we operate under especially stringent regulations.

“On the other hand, we face the same problems of hazardous waste disposal as Albuquerque, and both organizations are involved in upgrades to ensure the safety of people working at the facilities.”

Division of Responsibility

Though it’s an oversimplification of how ES&H works, here’s one way to look at the division of responsibility: The environmental staff deals with the way Sandia protects its surroundings. The safety and health staff is concerned with how Sandia protects people within the workplace.

“Actually we try to share and work together,” says Bill Burnett, manager of Dept. 3210, “but you have to have some idea of which organization to call first. If you’re concerned about something that might affect people working inside the Sandia facility, probably you call my department.

“If it’s outside the facility, then probably Gordon Smith [supervisor of 3202] would get the first phone call.”

S&H Duties

Within Bill’s department, the duties are spread among Don Parker’s Industrial Hygiene and Toxicology Div. 3211, George Tucker’s Health Physics Div. 3212, Al Stanley’s Health Instrumentation Div.

(Continued on Next Page)

‘Somebody Paid Attention’

7000 Safety Days Brought Change

Over the past months, you may have noticed a few improvements in Sandia’s safety climate — two aisles added in the seating areas of the Technology Transfer Center, bigger identification numbers and turn signals on EZ-Go scooters, and a radar gun with display visible to drivers in Tech Area I (picture in LAB NEWS, Dec. 9, 1988).

Other improvements haven’t been so obvious, but they are real. The Director of Security has advised his organization’s people that they are responsible for serving as examples of safe driving in and around Sandia facilities. And the Maintenance Warehouse (7815-2) got larger pallets to move office furniture more safely with fork lifts.

These — and others — were brought to management’s attention through the Safety Days program sponsored by Technical Support 7000 in the summer of 1987. They help illustrate that safety is a job for all organizations, not just ES&H 3200.

Safety Days included a series of presentations that Sandians in Org. 7000 attended. They heard talks on safety by 7000 VP Bob Peurifoy, then-ES&H Dept. manager Bill Burnett (now Health and Safety 3210), 7000 SHEAC Chairman Herman Mauney (7200), and 7000 SHEAC Executive Secretary Ted Church (7290).

“In the space of about two hours, we gave the 7000 people some things to think about,” says Ted. “The program included a videotape portraying incidents and accidents that had actually happened.

“On that tape, the supervisors whose organizations were involved explained what went wrong and what had been done to correct the causes. We think that will help people have sharper eyes when they’re checking for hazards in their own work areas.

“Then we had a tape that roamed around 7000’s territory, which includes Kauai, Pantex, Tonopah, the remote ranges, the shops — lots of potentially hazardous areas. Bob Peurifoy wanted to let the 7000 people know that they’re not alone, to remind them that they’re interdependent. At the same time, he wanted them to recognize that they’re important individually, too.

“Besides the presentations at Albuquerque, we did them also at Tonopah and Las Vegas. It was quite an endeavor. But it was worth it. The measure of its worth is that it’s still talked about — often with remarks such as ‘Gosh, somebody paid attention to what I said.’”

Comments, Criticisms, and Suggestions

Safety Days participants gave feedback, some in person and more than 500 through survey forms on which they could make comments, criticisms, and suggestions about improving safety. They also had the opportunity to note hazards that they were exposed to in their work areas.

The single most frequently noted “hazard” was noise, but Ted points out that in nearly all cases, the noise is a distraction rather than a true hazard. The ES&H organization will help take care of noise that reaches the hazard threshold, by advising on ear protection or otherwise protecting people.

But the 7000 supervisors were told, adds Ted, that “if they can justify the need, we can reduce noise levels further.” For instance, distracting noise might make it difficult for someone to do analytical work. Ted says that some supervisors have provided justification for reducing noise levels that have this kind of effect.

The surveys (or personal discussions that were also invited) gave some Sandians a chance

to let upper management know that they sometimes did not have full confidence in their own supervisors’ approach to safety. In the few cases where further investigation showed grounds for such worries, steps are being taken to increase the supervisors’ effectiveness in this area.

“The program also surprised many folks by showing the number of resources that are available — the ES&H organization, the Facilities organization, Medical, Security, and groups such as the Pressure Safety Advisory Committee and the individual Pressure Safety Advisors, to name a few,” says Ted.

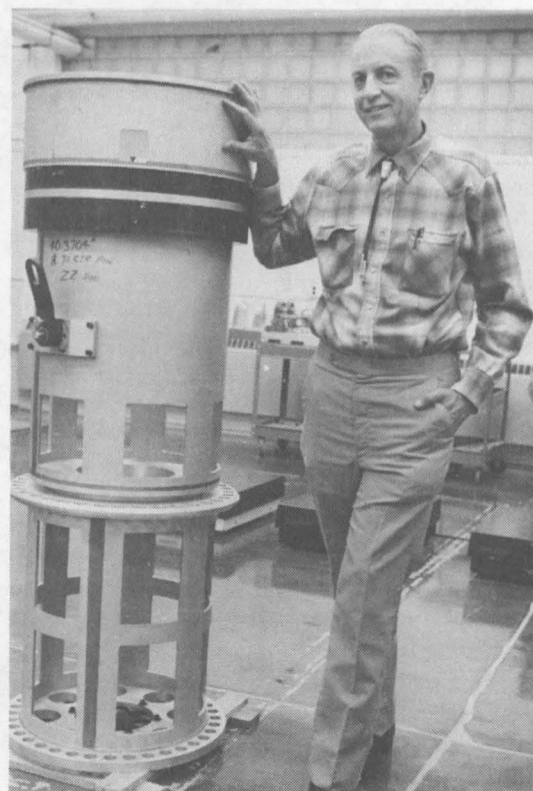
Broader Than 7000

Safety Days brought up issues that would affect all of Sandia, not just 7000. So after the survey results were analyzed and tabulated, Bob and Ted met with 3000 VP (and SHEAC Council Chairman) Dennis Roth and the directors in 3000, who include those responsible for ES&H, Medical, and Security.

Among the results were those mentioned at the beginning of this story. Others in process include improvement of lighting in the parking areas (\$125,000 is designated in the FY89 budget), the possibility of a wallet-size card displaying emergency phone numbers (Security’s looking into that), special attention to the condition of electrical utilities in older buildings, and a review of the ES&H orientation given to new hires.

“The most frequent feedback has come from people noticing the two extra aisles in the TTC,” says Ted. “We had to give up 30 seats, but people like being able to get in and out more easily, and they feel it’s safer in case of emergency.

“But the most important change is that Safety Days encouraged our people to become more aware of safety wherever they are. And we’ll feel especially proud if our people influence others throughout the Labs to pay extra attention to safety — and to point out unsafe conditions whenever they find them.”



TED CHURCH (7290) displays a handling fixture used in the Mass Properties Lab’s vertical balance machine. The fixture, whose history was featured in a videotape shown at Org. 7000’s Safety Days programs, replaces a less-substantial predecessor that failed during measurements on a flight vehicle.

(Continued from Page Seven)

ES&H

3213, and Margaret Carroll's and Don Rost's Safety Engineering Divs. I and II (3215 and 3216).

Don Parker's people, says Bill, deal with "toxic material hazard evaluations, food service sanitation, and respiratory protection. They look at physical hazards such as heat and cold, stress, and noise. In the radiation area they look at non-ionizing radiation — lasers and microwaves, for example."

George's division, says Bill, "is exclusively in the business of protecting the Sandia workplace and work force from ionizing radiation. That's usually associated with nuclear power, use of radioactive sources, X-ray machines, high-energy accelerators, and those sorts of things."

Supporting all directorate programs, but especially the health physicists, is Al's division, Health Instrumentation. Al's people supply the dosimeters that measure employees' and visitors' exposure to radiation, and they maintain the instruments that health physicists use to measure radiation. Al's group also evaluates environmental dosimetry to document background radioactivity in the Albuquerque vicinity.

The two safety engineering divisions share responsibility for overall safety program development and maintenance for the Laboratories. Specific programs include construction and firearms safety, explosives operations, electrical and pressure/vacuum systems, and aviation and vehicle operations. This group oversees the safety glasses and safety shoe programs. They also conduct accident investigations and maintain the Laboratories' injury/accident data base.

Serve as Advisors

In all of these areas, says Bill, on any given day "a typical staff member will be advising a line organization. Our primary function is to support the line organizations in getting their jobs done safely and in a healthful manner.

"Yes, we have institutional programs, such as industrial hygiene and health physics surveys, preparation of safe operating procedures, providing training, and maintaining health and safety records.

"But the first priority is to respond to the needs of the line organizations — to make sure they have the equipment and knowledge they need to operate safely.

"So it's not a program where the staff members come to work and always know what they're going to be doing on a given day. A lot is driven by the telephone, the calls we get that day. On a longer-term basis, week to week, we ask ourselves, 'What are the programs that need attention in the line organizations?'"

Nestor amplifies this advisory role of ES&H: "We'll be expanding our capabilities to support the line organizations in keeping up with the changes in regulations and DOE orders, to help them prepare for safety and health audits, and to provide additional training."

Briefings and Courses

Training is an ES&H function because the ES&H people obviously can't be everywhere all the time. Instead, they have to expand their influence by training other Sandia employees.

This is especially necessary since, as Bill points out, Sandia (like the other weapon labs) now has many employees who work frequently with exotic new materials. "This implies that we have to continue enhancing our health protection and safety practices, and it poses a significant technical challenge."

There's also the Sandia policy that gives supervisors and employees definite responsibilities in ES&H. Last summer, President Welber sent to all supervisors a memo, accompanied by policy statements that have since been incorporated in a new ES&H manual for Sandia supervisors.

The memo pointed out that "line supervisors are responsible for ensuring that the Laboratories' ES&H policies are followed within their organiza-



CONTRACTORS REMOVE PCB fluid from old utility transformers before they are shipped to an approved landfill for disposal. Sandia is currently substituting non-PCB insulating oil in all transformers in use at the Labs.

tions and that all personnel are aware of, and adhere to, all ES&H rules and regulations."

In support of this policy, Bill points out, ES&H staff members "are glad to give talks or training seminars to line organizations, on how to protect people or properly handle waste. We feel that's a worthwhile investment of our time.

"If somebody out there wants to know more about safety, health, or environmental protection, they can call us. We'll be glad to come out and talk. We want to help prevent problems, not just deal with problems after they've occurred."

(As an example of what can be done by line organizations, see "7000 Safety Days Brought Change.")

To help employees learn to work safely, formal courses are given; pressure safety, explosive safety, electrical safety, laser safety, and construction safety are examples. All new hires now receive an ES&H orientation and a handbook; the handbook, of which about 5000 copies have been distributed so far, can be ordered by supervisors for their employees.

SHEAC

Another way to establish Sandia-wide ES&H responsibility is through the vice-presidencies' Safety, Health, and Environment Appraisal Committees (SHEAC). Each VP except 4000 has a SHEAC charged with making sure that ES&H matters in the vice-presidency are in good order. The chairman of each SHEAC is a member of Sandia's SHEAC Council. Chairman of the SHEAC Council is Dennis Roth.

Explains Dennis, "The SHEAC Council's responsibilities include assessing Sandia's ES&H program needs and developing plans of action to address those needs. The Council will recommend resource allocations and evaluate continuing programs. It also provides a mechanism for direct input to Small Staff and the [corporate] officers on the status of ES&H at the Labs."

Although Sandia acknowledges its internal responsibility for ES&H, it is of course governed by federal law and regulations. The environmental side of that topic is covered by other stories in this issue (see "DOE Outlines Suspected Environmental Problems at Sandia Facilities" and accompanying stories).

On the safety and health side, Bill describes some of the interactions:

"The regulations that apply to Sandia Labs safety and health are mostly DOE regulations, but in turn the DOE embraces national consensus standards — the American Society of Mechanical Engineers [ASME] Boiler and Pressure Vessel Safety Code, the National Fire Code, the National Electrical Code, and other standards from the Occupational Safety and Health Administration [OSHA], American National Standards Institute [ANSI], American Nuclear Society [ANS], and the Institute of Electrical and Electronic Engineers [IEEE], for example.

"Many of these are mandatory DOE requirements, so as a result we follow good practice that's used by any other large laboratory in the United States.

"The Department of Energy has an understanding with the Department of Labor that DOE people will conduct OSHA-type inspections at Sandia.

"But we have an open-door policy for agencies with a valid need to come in and see how we do business — whether we're doing it safely and in a healthful manner. People in the state and national regulatory business — the Department of Labor is an example, or the National Institute of Occupational

Safety and Health — may come in and do their own appraisals."

The DOE Environmental Survey is one example of how Sandia is subject to outside official oversight.

Another is a technical safety appraisal of Sandia's nuclear reactor operations, conducted in July and August of 1988. This covered the Sandia Pulse Reactor and the Annular Core Research Reactor. It is the type of appraisal being conducted at DOE facilities as a reflection of increased attention to ES&H.

The reactor appraisal actually covered more than just the reactors. It included Sandia management practices, quality assurance, security, occupational safety, and radiological protection.

The appraisal team's final oral presentation included many favorable comments on Sandia's efforts. The written report, issued early this year, said, "The program organization activities evaluated are found to be conducted in a safe manner by competent persons."

As expected from a rigorous appraisal, the report also included concerns for Sandia to address. Of the 59 concerns listed, however, more than half were directed at increasing safety margins that already exist. The rest related to various aspects of complying fully with regulations, mostly in documentation and clarification of formal procedures.

The two highest-priority concerns were to modify the routine for operating a bridge crane and to make minor changes in training and evacuation procedures for responding to a newly installed criticality alarm.

The evaluators praised Sandia's method of allowing continual safety assessment in preparing for experiments. They highly approved Sandia's personnel radiation monitoring system. And they also praised the Total Life Concept program as a way of helping employees be more healthy and therefore more alert.

Into the Future

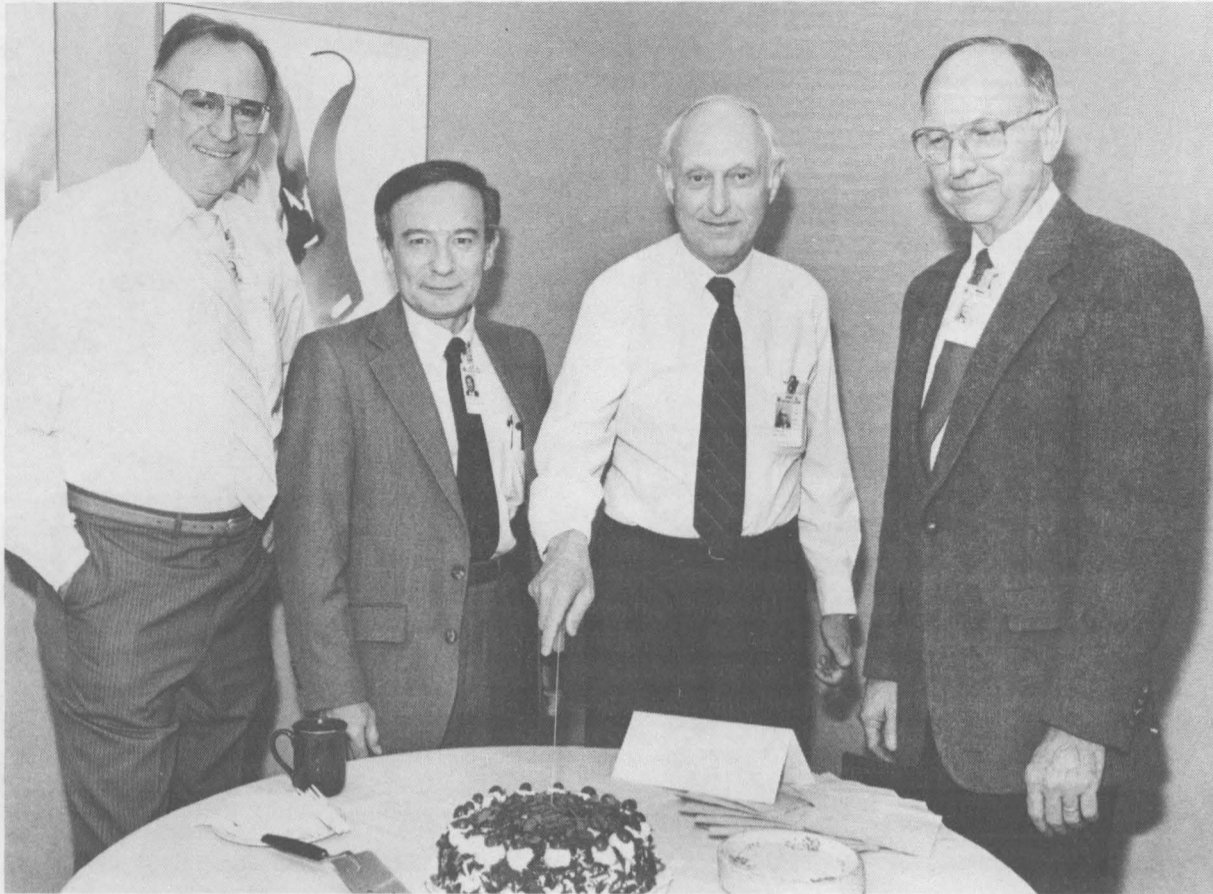
As understanding of ES&H increases, it affects the planning of future facilities and operations. Bill points to the Microelectronics Development Lab (formerly RHIC II), Area IV facilities, and the Process Development Lab as examples. "The environmental, safety, and health people were an integral part first of the design team, then of the review team as construction progressed, and finally of the inspection team for the completed facility.

"In the environmental area, for example, there was preplanning for the MDL and PDL so that we could valve off and contain on-site accidental releases of either gas or liquid. If a release occurs, it can be measured, processed, and treated before it's released to the sewers or the air. It's the sort of thing that we didn't have the capability to do in our facilities that were built 40 years ago."

In many cases, we simply didn't understand as much decades ago as we do now. Bill says, "Our knowledge has increased dramatically in the last 40 or 50 years. We know more about long-term effects of radiation exposure and chemical exposure, for example. So now we can take the right kind of steps to mitigate the effects on our work force and the public."

Nestor sums up Sandia's position: "We will not perform a job that we feel is going to harm either the people or the environment. And with our long-range planning effort going on across the Labs, we are looking to the future so that we don't get surprised."

NEC Wins Internal Competition



CELEBRATING VICTORY over the rest of Sandia in the internal "Don't Drive One in Five" Challenge Week competition are these representatives of NEC, the "Not Elsewhere Classified" organization: (from left) Arlyn Blackwell (400), Bob Kestenbaum (4000), Irwin Welber (1), and Otis Cox (130). Arlyn furnished the victory cake.

The "Not Elsewhere Classified" organization — Orgs. 1, 20, 30, 4000, 100, 200, 400, 21-1, and 22-2 — bested the rest of Sandia in the competition to determine which organization would achieve the lowest percentage of solitary drivers during the Jan. 23 work week.

Some 39 percent of the 277 members of the NEC group carpooled, vanpooled, took a bus, or rode a bike at least once during the week.

Other organizations and their percentages: 1000

(34), 6000 (30), 2000 (26), 5000 (22), 3000 (20), 9000 (18), and 7000 (17).

Overall, the Sandia total was 24 percent — 1662 Sandians out of an on-roll total of 7034 (which excludes those based at TTR and NTS and those on sick leave, vacation, or travel all five days). According to local honchos in Org. 400 and Linda Stefoin (commuter assistance coordinator in Div. 3543), winner of the DOE/AL vs. KAFB vs. Sandia challenge will be announced later.

Maybe One-Third Not Working

It's 1989; Do You Know How Your Smoke Detector Is?

Home smoke detectors are the fire-safety success story of the decade, according to the National Fire Protection Association (NFPA): Ten years ago, only one-fifth of US homes had a smoke detector, but today only one-fifth do not have at least one.

That's significant, points out fire-protection engineer Vern Duke (7816), because homes with smoke detectors have roughly one-half the risk of death during a fire, compared with homes that lack a detector.

But there's some bad news, too, says Vern: "In one-fourth to one-third of the homes that have a smoke detector, it's not operational. The NFPA finds that the main cause is a dead or missing battery.

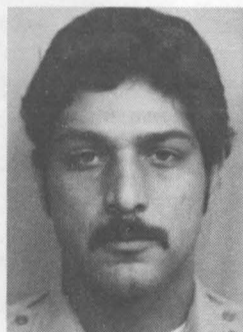
"Although smoke detectors have clearly saved lives, they can't save yours unless they're working."

Some suggestions that Vern offers to help us protect ourselves from fire:

- Check each smoke detector's battery (some detectors may be connected to the house's wiring and have no battery);
- Test the smoke detector;
- Develop and rehearse a home escape plan;
- Add one or more smoke detectors;
- Consider giving smoke detectors as presents to friends and loved ones.

Think of what's at stake, says Vern: "How agonizing it would be to lose a loved one for lack of a smoke detector or a battery."

Death



James Gonzales of Patrol Division — North 3434 died in a motorcycle accident Jan. 22.

He was 27 years old.

James was a security inspector and had been with the Labs since 1982.

He is survived by his wife, two daughters, and one son.

Welcome

Albuquerque

- Walter Caldwell (9114)
- John Dye (2335)
- Joseph Jones (7845)
- Kenneth Kvam (7213)
- Greg Mann (7252)

Arizona

- Timothy Knewitz (144)

Georgia

- Mahmood Siddiqui (2314)

Illinois

- Robert Anderson (1414)

New Mexico

- Michael Bredemann (9212)
- Paul Sands (2612)

Pennsylvania

- Patrick Cowher (3312)

Texas

- Susan Chao (9212)
- Kim Reed (1248)

Take Note

President Welber received a letter from United Blood Services thanking Sandians for their help and support throughout 1988. Sandians donated 1232 pints of blood in 1988; 99 of these pints were donated during the December blood drives.

* * *

Jim Fish (6226) received the Bureau of Land Management's "Take Pride in America" award from President Reagan in a ceremony at the White House. Jim recruited, organized, and trained a group of volunteers to assist the Rio Puerco Resources Area in the BLM Albuquerque District.

* * *

Twenty-nine families from Los Padillas, Kirtland, and Edgewood elementary schools received a helping hand from the Org. 2800 1988 Christmas Food-Basket Drive. Tim Dubay (2857) and Gene Arnot (2851), drive co-chairmen, note that \$2370 was collected, an average of \$7.45 per person in the directorate. Tim and Gene thank all participants and contributors for their support, and say they are formulating plans and ideas for next year. Keep them in mind when clearing things out (toys, blankets, gloves, mittens) at home during the year.

Sandia Colloquium

Tom Jordan from MIT's Dept. of Earth and Planetary Sciences will talk about plate tectonics at the Technology Transfer Center (Bldg. 825) on Feb. 24 at 9 a.m. Call host John Rundle (6231) on 4-8158 for more information.

Idolia Collier (DNS, RN) is the next speaker in the lecture series sponsored by the UNM College of Nursing as part of UNM's Centennial celebration. She will speak on "Osteoporosis: Take Charge and Stand Tall" from 10 a.m. to noon on Feb. 11 at the Continuing Education Center (1634 University Blvd. NE). Admission is free.

Retirement Seminar

Guy Trujillo of Financial Network Investment Corp. will present "Real Estate as an Investment for Retirement" on Feb. 16 at 5 p.m. at the Coronado Club, Conquistador room. Discussion on IRA roll-overs will be included. RSVP to Guy on 291-8585.

If you've wondered about what to plant in your New Mexico garden or how to grow and keep a lawn, the Council of Albuquerque Garden Clubs offers the following help.

A four-part home landscaping class meets Saturdays from 9:30 to 12:30 p.m. beginning Feb. 25; topics include choosing appropriate plant material for New Mexico, irrigation methods and design, and maintenance. Cost is \$40 for all four sessions.

A six-session workshop, "Gardening in New Mexico," is offered Tuesday evenings from 7 to 9:30 p.m. beginning Feb. 28, featuring different speakers on a variety of topics addressing special requirements and challenges of gardening in New Mexico. Cost is \$30 for all six sessions or \$6 at the door for individual classes.

All classes and workshops are held at the Albuquerque Garden Center (10120 Lomas NE). For information and registration, call the Center on 296-6020.

Congratulations

To Gladys Rowe (3144) and Dan Sheldon (7223), married in Albuquerque, Dec. 23.

Sympathy

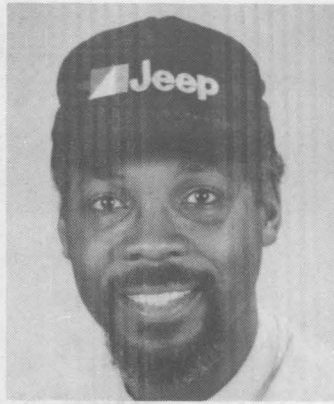
To Craig Walker (3425) on the death of his father in Albuquerque, Jan. 25.

To Wendland Beezhold (1232) on the death of his father in Chicago, Jan. 26.

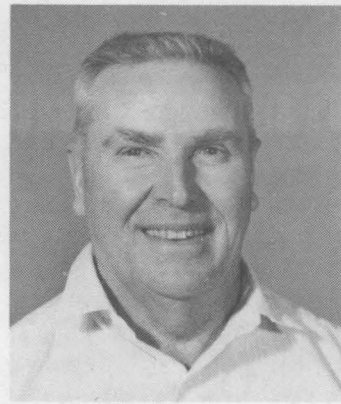
MILEPOSTS

LAB NEWS

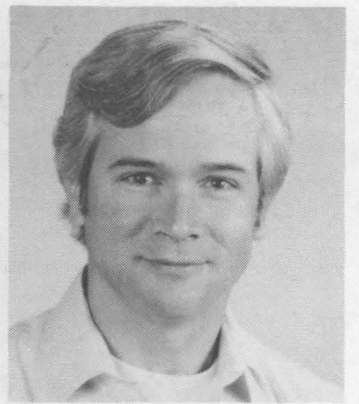
FEBRUARY 1989



Fred Johnson (8284) 20



Lyle Hake (7132) 40



Mike Pendley (8234) 15

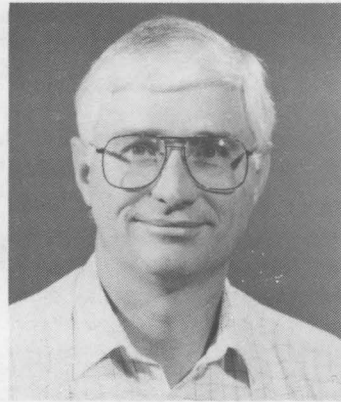


Evelyn Miller (2624)

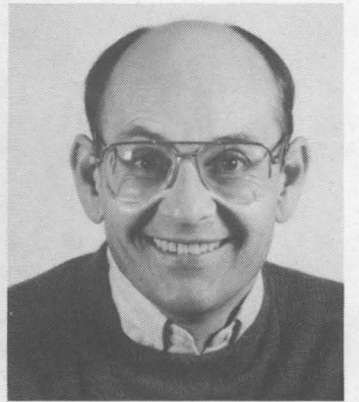
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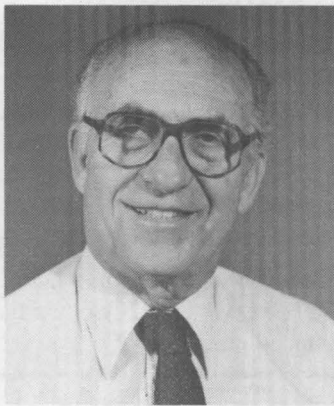
Shirley Carson (8236) 20



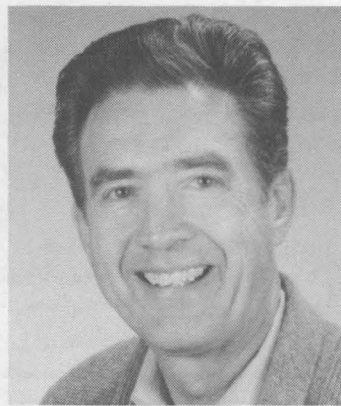
Charles Adams (1522) 15



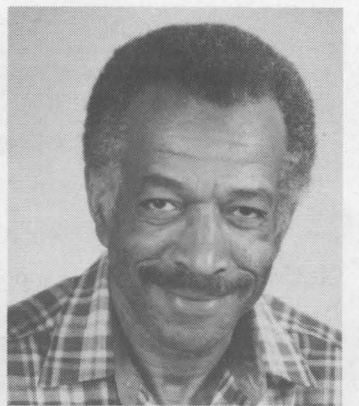
Al Bastion (8513) 30



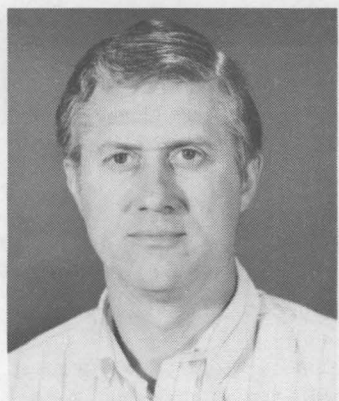
Wayne Trump (3521) 25



Hank Schoeppe (8454) 30



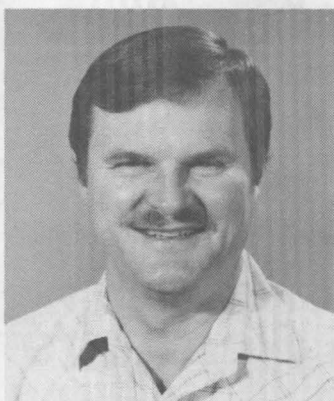
Syl Grisby (8281) 30



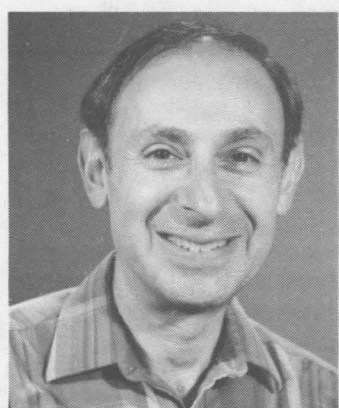
David Waymire (9112) 15



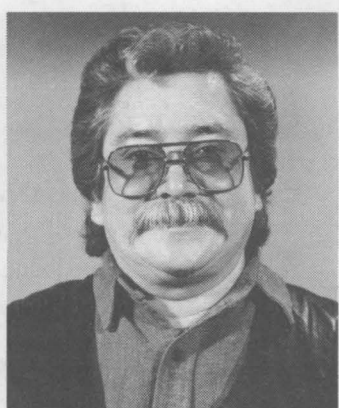
Chuck Bisson (8233) 20



Gary Schuster (2175) 20



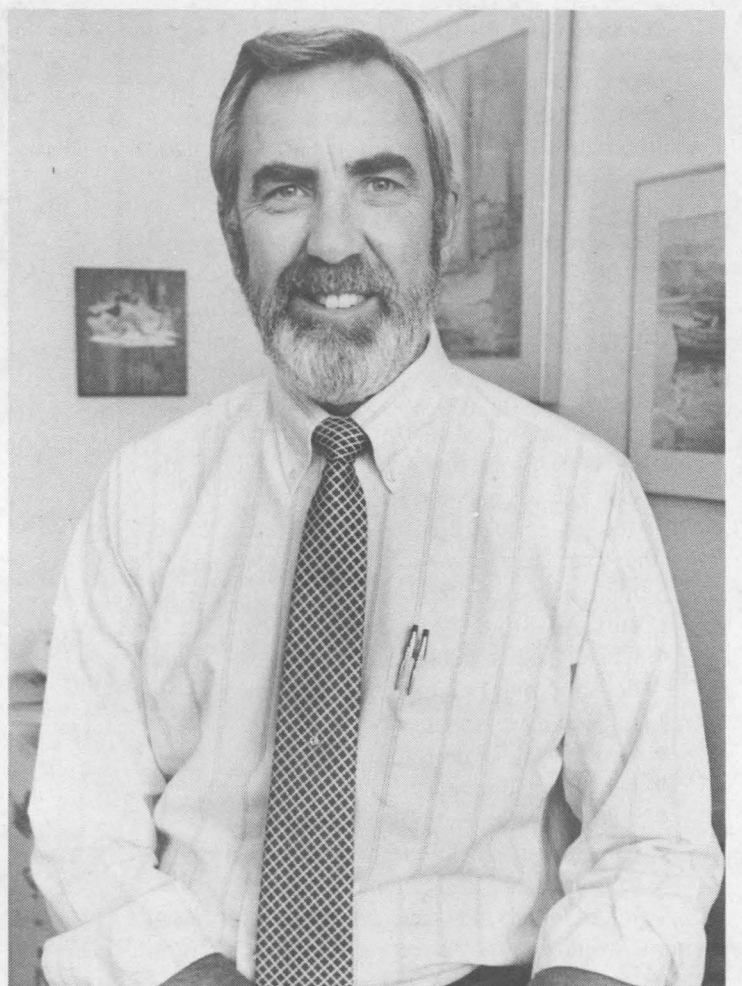
Morton Lieberman (2363) 20



Rey Griego (3428) 15



George Perkins (144) 30



Joe Stiegler (6320)

30

November 1988 Earnings Factors

Earnings Factors

Savings Plan for Salaried Employees (SPSE)

AT&T Shares	1.0441
Government Obligations	1.0021
Equity Portfolio	.9828
Guaranteed Interest Fund	1.0070
South Africa Restricted Fund	1.0060
Diversified Telephone Portfolio	
Unrealized Appreciation	.9969
Realized Appreciation	.0000*

Savings and Security Plan — Non-Salaried Employees (SSP)

AT&T Shares	1.0442
Guaranteed Interest Fund	1.0071
South Africa Restricted Fund	1.0068
Diversified Telephone Portfolio	
Unrealized Appreciation	.9961
Realized Appreciation	.0000*

*The 1 has been removed from the earnings factor. Current month's DTP earnings may be calculated directly: Earnings Factor x DTP Current Worth = Current Month's Earnings.



OCCASIONAL GOLFERS, take note — Rusty Ganzerla (ret.) found these balls in a golf bag he's had in a closet since the 60s. There's a story behind the story. Last July, Rusty was looking off his deck across the jogging path along Tramway Blvd. A passing jogger waved — he turned out to be a fellow '41 high-school grad from Gallup, Carl Vidal, whom Rusty hadn't seen for 25 years. Carl insisted they play a round of golf. Rusty hadn't used his clubs in 25 years, either, since the days he played with Frank Ewing (dec.), George Marks (dec.), and Dick Strome (ret.). He has no theory on why the balls are misshapen. He doesn't think it was heat, because other balls in the bag were OK, and the golf bag was in an indoor closet. (By the way, the two did "hit a few balls," says Rusty, but they haven't gotten their game in yet — too busy. Who says retirees have all that free time?)

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4. Use 8½ by 11-inch paper.
5. Use separate sheet for each ad category.
6. Type or print ads legibly; use only accepted abbreviations.
7. One ad per category per issue.
8. No more than two insertions of same "for sale" or "wanted" item.
9. No "For Rent" ads except for employees on temporary assignment.
10. No commercial ads.
11. For active and retired Sandians and DOE employees.
12. Housing listed for sale is available for occupancy without regard to race, creed, color, or national origin.

MISCELLANEOUS

- AKC-REGISTERED BORDER TERRIER PUPS, father AKC champion, brown, shots, \$350. Lawson, 821-0360 or 299-0713.
- FOUR BRONCO TIRES & WHEELS, steel-belted radials, LT235/75R15, 5-bolt, 5-1/2" bolt circle, \$215 OBO. Vigil, 296-3590.
- SKIS, 145cm Wizzard (Austrian), Tyrolia Clix 190 bindings. Randall, 821-0388.
- '55-'57 PONTIAC PARTS; '56 Pontiac shop manual, \$12. Boyd, 298-4712.
- FRIGIDAIRE APPLIANCES: refrigerator, bottom freezer, \$100; electric range, self-cleaning oven, \$90. Grosbier, 881-1958.
- FORD TRAILER, long wide bed, \$250 OBO; '88 Jayco 1008SB pop-up camper, \$3995. Perea, 292-2519.
- ENCYCLOPAEDIA BRITANNICA, \$175. James, 294-6837.
- INTELEX TELEPHONE SYSTEM: 4 GLX telephone stations and system controller, 8-line, 16-station capability, \$950. Salazar, 1-984-8525.
- SPALDING SPECTRAL SKIS, w/Salomon bindings; woman's ski boots, size 8; Craftsman electric blower; size-12 hiking boots; canning jars. Green, 296-3889.
- O'KEEFE AND MERRITT COOK TOP, 4-burner, natural gas, harvest color, \$45. Guttman, 888-5114.

- JL INFANT CHANGING TABLE, \$35; crib accessories: skirt, bumper guards, headboard cover, 3 sheets, \$30. Gonzales, 898-4110.
- INFANT SEAT, infant swing (wind-up), \$15/ea. Prior, 281-5532.
- BROWN CARPET w/pad, new, 3' x 7'. Sedillo, 255-0669.
- SIMMONS CRIB, walnut color, w/extra-firm orthopedic mattress, \$100; "Posture-premium III" twin-size box spring, \$100; baby clothes and toys. Bunker, 299-5335.
- REFRIGERATOR, top freezer, 16.2 cu. ft., Sears Coldspot, avocado, \$100. Auerbach, 296-1489.
- SOFT TOP for Jeep CJ-7, \$175. Rutledge, 265-3167.
- KAWAI GRAND PIANO, 5', ebony finish, locking keyboard, \$4000. Esterly, 296-9759.
- THERMADOR DOUBLE OVEN, 24", built-in; RCA 25" TV, needs repair; AT&T answering machine, w/remote. Broyles, 344-3872.
- UTILITY TRAILER, 4' x 8', \$150 OBO; limited quantity of firewood, you haul. Liguori, 256-3613.
- PADDLE TIRES and rims for VW, \$250; truck tires on Centerline rims, \$150; both fit 5-hole pattern. Apodaca, 864-7523 after 5:30.

- OAK BROYHILL EMPHASIS II BEDROOM FURNITURE: triple dresser, \$225; nightstand, \$110. Allen, 821-8491 or 275-2202.
- UTILITY TRAILER, step-side pickup, new professional paint, w/spare tire, \$390. Tapp, 821-3843.
- IRVIN MARRS SADDLE, \$1000. Marrs, 281-9889.
- CHILD'S CROSS-COUNTRY SKI OUTFIT, 160mm Rossignol, \$50. West, 292-7091.
- WEBER LP-GAS GRILL, kettle type, 22" diameter, 5-gal. tank, \$50. Girard, 821-5529.
- SKIS: Hart "Rook," 180cm, \$50; Rossignol "Smash," 140cm w/Look 55 bindings, \$75; Heierling ski boots, size 10-1/2, \$60. Abbin, 296-7678.
- WOODEN DESK w/glass top, chair included, \$125 OBO. Thompson, 294-7572.
- TAILGATE PROTECTIVE COVER for Suburban, new, \$35. Bentz, 299-3448.
- TRUCK-BED RAIL PROTECTORS, fit late-model Ford, \$50; glass patio door, 8' wide, \$25. McFarland, 292-3129.
- KENMORE WASHER & DRYER, 4 yrs. old, \$300/both. Walker, 294-2293.
- DRAFTING TABLE, 60" x 30", w/Vemco drafting machine, \$225 OBO. Gwinn, 281-9897.

- STEEL DESK, \$35. McDonald, 275-3075.
- POOL TABLE, Brunswick regulation size, 1" slate top, w/accessories. Stewart, 265-8927.
- FIREWOOD, pickup load, \$45; triple laundry tub, w/fixture, \$30; 4 closet doors, 36" x 78", \$25. Pilat, 292-4727.
- PANASONIC HOME STEREO, \$75; gray foam sofa, \$200; 4-drawer desk, \$50; JVC AM/FM tuner, new, \$50. Blottner, 292-6058.
- LAP-TOP COMPUTER, DG-1 w/2 720K 3.5" drives, manuals, DOS, battery pack, charger, power supply, carrying case, \$750. Sultemeier, 1-864-8917.
- WASHER, new motor, \$75; dryer, \$50. Golden, 299-1274 leave message.
- LUGGAGE RACK, chrome, for TR-4 series and others, \$10. Talbert, 298-9036.
- SEARS EXERCISE MACHINE (not an exercycle), \$60. Summers, 881-7765.
- INFANT/CHILD BIKE SEAT, \$20; Sanyo tape deck, \$12; older stereo, \$15; crib mattress, \$15; changing table, \$15. Goetsch, 892-8366.

TRANSPORTATION

- '85 DODGE CARAVAN, 5-spd., AM/FM cassette, tinted windows, convert-a-bed, 36K miles, \$8200. Campbell, 296-5792.
- '53 CHEV. PICKUP, 6-window cab, 327SB, extra parts, \$995 w/motor, \$600 w/o motor. Perea, 292-2519.
- '72 CHEV. BLAZER, 4-WD, 350 engine, one owner, \$950. Hickerson, 281-2598.
- '86 DODGE VAN, 8-passenger, loaded, 42K miles, best reasonable offer. Cockerham, 892-6927.
- '75 BUICK REGAL, 47K miles, 4-dr., \$600. Bercaw, 275-1691.
- '77 CRUISE AIR CLASS A RV, 27', 47K miles, newly redecorated interior, roof AC, stereo, CB, \$15,500. Pierce, 268-2122.
- '79 VW POP-TOP VAN, new battery, sleeps 4, \$2500 OBO. Marrin, 898-4849.
- RALEIGH GRAND PRIX BICYCLE, w/Shimano 600EX components, \$150. Rutledge, 265-3167.
- '77 BUICK REGAL, AT, PS, PB, AC, recent tune-up and oil change, new water pump and hoses. Ferguson, 292-3824.
- '79 MONTE CARLO, AT, AC, PS, PB, \$800 OBO. Apodaca, 864-7523 after 5:30.

- '78 VW RABBIT, AC, cassette. Hansche, 281-5623.
- '75 CHEV. SCOTTSDALE C20 PICKUP, 350 engine, AC, dual tanks, 3:73 rear end, new dual exhaust and tires, \$2650. Caldwell, 821-7110.
- '84 3/4-TON PICKUP, 4x4, shell, carpeted padded back, 6.2L diesel, AC, AT, trailer package, AM/FM tape, new tires. Tapp, 821-3843.
- '88 FORD MUSTANG LX, 4K miles, AT, loaded, \$12,000. Silverman, 881-9368.
- '82 BRONCO XLT, AT, PS, PB, AC, AM/FM cassette, new transmission, 35K miles on new engine, \$6100. Baker, 892-3357 after 3.
- 20" BMX RACING BIKE, \$200. West, 292-7091.
- '66 FORD F100 PICKUP, one owner, 4-spd., 351-CID, new tires, extra wheels & tires. Ames, 256-7707.
- BICYCLES: man's 10-spd. Schwinn, \$50; woman's 10-spd. Free Spirit, \$30; girl's Cycle Pro, banana seat, \$50; new 27" x 1-1/4" tires, \$5. Sullivan, 299-6545.
- '88 GMC PICKUP, 1/2-ton, 13K miles, AC, AM/FM radio, 305 V-8, fuel-injected, short bed, \$13,500. Fiore, 1-865-3697.
- '82 CORVETTE, 350 AT, glass tops, AC, PS, PB, 100K miles, below NADA book, \$9900. Buttry, 821-2660.
- MAN'S BICYCLE, 10-spd., \$35. McDonald, 275-3075.
- '78 OLDS. 98 REGENCY, 2-dr., AT, AC, PS, PB, PW, PL, power seats, cruise, tilt, AM/FM cassette, \$1800. McDowell, 821-0339.
- '67 GTO, 400-CID, needs work, his/hers shift, tinted glass, \$3000. Gonzales, 836-3599.
- '67 SUZUKI S-32 STREET BIKE, 150cc, adult-ridden, \$150. Talbert, 298-9036.
- '65 MERCURY COMET, 6-cyl., 4-dr., standard transmission, radio, AC, \$325. Jeske, 299-2810.
- '86 FORD RANGER SUPERCAB, 4-cyl., 5-spd., AC, PS, AM/FM, camper shell, \$6800. Chambers, 898-6419.

REAL ESTATE

- 4-BDR. RANCH-STYLE HOME, North Valley, 3000 sq. ft., 1 acre (horse property). Chason, 243-4305.
- 3-BDR. HOME, den, 1-1/2 baths, detached 2-car garage, landscaped, 100 x 120 lot, SW Valley, \$70,000. Benton, 877-2473.
- 3-BDR. HOME, SE, LR, DR, den, wood-

- burning FP, hardwood floors, double garage, 2100 sq. ft., assume FHA, \$94,500. Cook, 255-7396.
- HOME IN CHAMA, pitched roof, all utilities, 1/2 acre, on highway, make offer. Vigil, 242-2969.
- 2 ACRES, utilities, water, county road, 18 miles from Tramway on S-14, 1/2 down, \$20,000. Steinfort, 281-9893.
- 3-BDR. TOWNHOUSE, 2 baths, 1426 sq. ft., foothills, security bars, view, great room, \$82,900. Padilla, 299-2637.
- 3-BDR. HOME, 1800 sq. ft., San Gabriel Village, \$97,000. Seltzer, 299-0284.
- 3-BDR. HOME, Academy Acres, 1-3/4 baths, 1350 sq. ft., formal DR, custom kitchen, ceramic tile/no-wax flooring, upgraded carpeting & drapes, 2-car garage, landscaped, \$83,500. Burstein, 821-6688.

WANTED

- PHONOGRAPH CARTRIDGE & STYLUS or Shure M95 stylus, used OK. Ginn, 883-0004.
- HOUSEMATE, Christian professional, nonsmoking female, 3-bdr. home, NE, bedroom w/private full bath, kitchen privileges, laundry, no deposit, \$290/month + 1/2 utilities, available end of Feb. Chavez, 828-2106 evenings.
- KITCHEN DINETTE SET, 1950s chrome-leg style. Mills, 764-9734.
- ROOMMATE, share 3-bdr. house, Juan Tabo NE area. J. Beer, 294-3316.
- ROOMMATE, female, to share 3-bdr. house near Chelwood and Candelaria, \$200 + 1/2 utilities. Bauhs, 292-5571.
- LUGGAGE RACK for '83 BMW R65 motorcycle. Talbert, 298-9036.
- ENCYCLOPEDIA, for children, old edition OK; junior-size tennis rackets and Nordic ski equipment, low price. Todd, 344-9015.
- ROOMMATE, to share 2-bdr. house, Indian School and Pennsylvania, \$220/month + 1/2 utilities. Golden, 299-1274 leave message.
- GOALIES for women's outdoor soccer league, spring season, experienced or willing to learn. Klarkowski, 281-1005.
- SOCCER PLAYERS for spring season, Albq. women's soccer league, athletically inclined, all skill levels — beginner to advanced. Torres, 265-1470.
- APPLE II+ LANGUAGE CARD (16K memory), reasonable. Boverie, 255-1071.

It's South-of-the-Border Time: Join the C-Club Conga Line Tonight

RHYTHMIC RHUMBAS and saucy sambas are on tap this evening at Mexican Night. The special-menu dinner features all kinds of good hot stuff. Afterwards, enjoy a razzle-dazzle floor show (7:30 to 8 p.m.) by the colorful Mexican Fiesta Dancers; then, dance the night away to the music of Spinning Wheel. Help out Chef Henry and the chile choppers in the kitchen by calling in your reservation ASAP (265-6791).

BINGO FOR KIDS is set for tomorrow night (Feb. 11). There's a low-cost buffet served from 5 to 6 p.m., and bingo action starts at 6. Bingo cost is \$2.50/person (four cards, 10 games). Everyone can play; there's no age limit. Giveaways galore take the place of cash prizes for Kids' Night.

A REMINDER: If you haven't yet reserved your space at the Valentine's Day Gala next Tuesday (Feb. 14), the time to do it is *now*. Dinner at 6 p.m. includes your choice of entree — filet mignon or coquilles St. Jacques Mornay — and a half litre of house wine. Afterwards, it's dancing to the romantic tunes of the Roland DeRose Orchestra. Flowers and a 5 x 7 color photo are included in the \$28/couple price.

ALWAYS ON SUNDAY — That describes C-Club brunches to a T. And the brunch bunch is gearing up for another magnificent meal this Sunday (Feb. 12) from 10 a.m. to 2 p.m. It's the best deal in town: \$6.95/adults and \$3.50/kids ages 4 to 11.

EVERYBODY'S FAVORITE HOUND, Snoopy, is featured at Family Dinner Theatre Night next Friday (Feb. 17). A dinner buffet, served at 6 p.m., includes baron of beef and baked chicken as entrees, a salad bar, and soft ice cream for dessert. After-

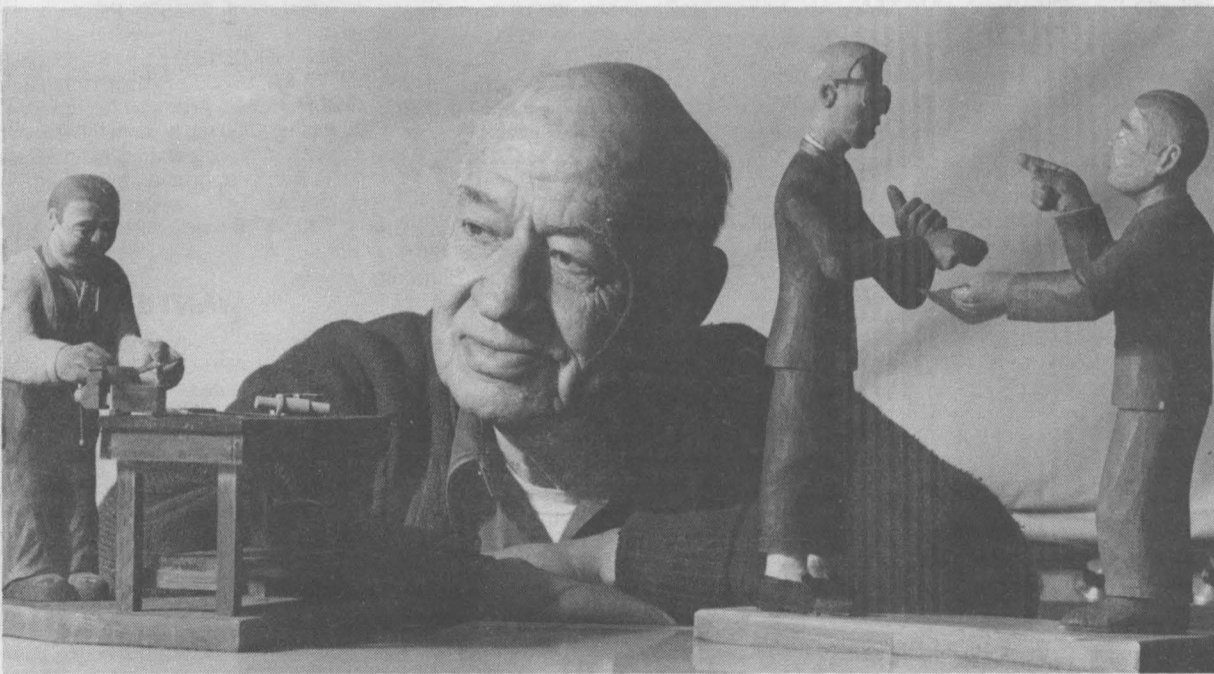
ward (at 7:30 p.m.), folks from the Kirtland Community Theatre present the musical "Snoopy," a story about Charlie Brown's best friend. Cost for dinner and show is \$8 for adults, \$5 for children ages 3 to 11, and free for toddlers less than 3. This is likely to be a very popular event, so here's a word to the wise: Make that reservation early.

C-CLUB SCHUSSBOOMERS, aka Coronado Ski Club members, get together this month on Tuesday, Feb. 21. The group — well known for its socializing — will do just that from 7 to 7:30 p.m., when the meeting starts. The program, featuring Taos Ski Valley, is followed by a Warren Miller ski film. As usual, some fabulous door prizes will go to a lucky few.

BEATING THE DEALER in Glitz Gulch (Las Vegas, for the uninitiated) has always been a prime goal of the T-Bird card sharks. They'll be working on that problem next Thursday (Feb. 16); gaming starts at 10 a.m. Come out for all kinds of card games, free refreshments, and door prizes.

MAIN LOUNGE EVENTS this month include Comedy Video Night Feb. 15 (videos start at 6 p.m.), Membership Night Feb. 22 (free munchies and a free drink for members), and Import Beer Night Feb. 23 (your favorite import costs just \$1.25 between 4 and 8 p.m.).

NEXT BINGO BLAST is set for Feb. 16; the early-bird game starts at 6:45 p.m. Cards go on sale at 5:30, and reasonably priced food is available throughout the evening. (A secret message to kids under 10: You're not allowed in the bingo area on regular gaming nights. That's why you should bring the folks out to Kids' Bingo tomorrow night.)



SANDIA MEMORIES are captured in basswood by carver Floyd "Pop" Kunz, who retired in 1970 after 17 years in the Labs' special transportation and handling equipment group. At left is a machinist who ended each day with most of his tools in his rear overall pockets and his cuffs under his heels. At right is a Sandia new-hire asking "Who? Me?" and his boss replying "Yes! You!" In addition to wood-carving, Pop keeps busy doing finish carpentry and cabinet work out of his East Mountain home.

Discuss 'Parenting Your Teenager' With an Expert

By Arlene Price (3330)



Lectures are not the only way — or even necessarily the best way — to get the information you need. So I invite you and/or your spouse to the new Mental Health Roundtable — an opportunity to meet an expert and ask questions and discuss issues on a variety of topics.

The first topic — prompted by your tremendous response to last month's program on parenting — is "Parenting Your Teenager." Maria Williams, a clin-

Events Calendar

Feb. 10-12 — 25th Anniversary Antique Show & Sale, antiques and collectibles; noon-9 p.m. Fri., noon-8 p.m. Sat., noon-5 p.m. Sun.; South Exhibit Hall, Convention Center, 268-5122 or 881-7557.

Feb. 10-19 — "When You Comin' Back, Red Ryder?" play by Mark Medoff, New Mexico Repertory Theatre production; 8 p.m. Tues.-Sat., 2 p.m. matinees Sat. & Sun.; KiMo Theatre, 243-4500.

Feb. 10-19 — "Play It Again, Sam," by Woody Allen; 8 p.m. Wed.-Fri., 6 & 9 p.m. Sat., 2 p.m. Sun.; Albuquerque Little Theatre, 242-4750.

Feb. 10-25 — "Ubu Roi," farce about a nobleman who takes over the Polish throne and terrorizes the natives, presented by Theatre-in-the-Making; 8 p.m. Fri.-Sat. (no performance Feb. 11); Centerstage (formerly Rep East, 3211 Central NE), 260-0331.

Feb. 10-March 4 — "A Raisin in the Sun," play by Lorraine Hansberry about divergent dreams of — and conflicts within — three generations of a black family living in Chicago's South Side; 8 p.m. Fri.-Sat., 6 p.m. Sun.; Vortex Theatre, 247-8600.

Feb. 10-March 19 — Exhibit, "Houses by Bart Prince," drawings and architectural models; 9 a.m.-4 p.m. Tues.-Fri., 5-9 p.m. Tues. evenings, 1-4 p.m. Sun.; UNM Art Museum, 277-4001.

Feb. 10-April 30 — "High Country," photography/video exhibit detailing plants and animals in the harsh environment above 11,000 feet in New Mexico's Sangre de Cristo Mountains; 9 a.m.-5 p.m. daily, New Mexico Museum of Natural History; 841-8837.

Feb. 11 — Baroque music concert, Chamber Orchestra of Albuquerque w/harpist Igor Kipnis; 8:15 p.m., St. John's United Methodist Church (2626 Arizona NE), 881-0844.

Feb. 11 & 12 — UNM Centennial Event: the Royal Philharmonic Orchestra of London conducted by Vladimir Ashkenazy; 8 p.m. Sat., 2:15 p.m. Sun.; Popejoy Hall, 277-3121.

Feb. 16 — Jackie Torrence, master storyteller; performances at 1 p.m. (children) and 7:30 p.m. (family); South Broadway Cultural Center, 848-1320.

Feb. 18 — "Love's Labour's Lost," by William Shakespeare; 8:15 p.m., Popejoy Hall, 277-2131.

Feb. 19 — "New Babylon," classic silent film screening with accompanying score by Dmitry Shostakovich performed live by the New Mexico Symphony Orchestra, UNM Centennial event; 3 p.m., Hiland Theatre (4804 Central SE), 842-8565.

Feb. 23-25 — "Quilters," musical about frontier women; 8 p.m., Rodey Theatre, 277-4402.

Feb. 24 — Crownpoint Rug Auction: 3-6:45 rug viewing, 7 p.m. auction; Crownpoint Elementary School, 786-5302.

Washington Brainstorm

New York's cabdrivers are famed for their knowledge of the world — if not the streets of New York — but Washington is catching up fast. Our man in the District of Columbia hailed a taxi to take him to a meeting of the American Society of Neuroscience. "The Convention Center?" the cabdriver asked. "What they got on there now?" Our man explained that the meeting was mostly about the brain — how it worked and how it went wrong.

"Oh yeah," said the cabbie. "I seen something about it on TV. A report on Old Timer's disease, ain't it?"

New Scientist

ical psychologist who specializes in working with families and adolescents, will lead the discussion.

Maria will make suggestions, based on your questions and concerns, on how to handle specific problems. She'll also provide general approaches to parenting as it involves teenagers and soon-to-be teenagers.

Remember that the more information you have in your parenting arsenal, the more confidence you'll have in your parenting ability.

The discussion is set for Feb. 17 from noon to 12:45 in the Technology Transfer Center. Please join us.