



# LAB NEWS

VOL. 27, NO. 1

JANUARY 10, 1975



## Chemical Exchange Method

# Reactor Waste Process Developed

A Sandia Laboratories proposal for the solidification of liquid radioactive waste from nuclear power plants was recently funded by the AEC's Division of Waste Management and Transportation.

The Sandia Solidification Process (SSP) stems from an idea suggested by Bob Dosch of Chemical Technology Division 5824. Bob's idea is to separate the radioactive solids from high level liquid waste from fuel reprocessing plants by passing the stream through a new type of inorganic ion exchange material and then heating and pressing the residue into a ceramic.

In laboratory experiments using both stable materials and materials containing minute amounts of radioactive trace elements to simulate the high level waste streams, the SSP has been demonstrated to be practical and effective. The end product — a niobium or tantalum based ceramic — has the desirable qualities of remaining stable (gases do not escape) up to very high temperatures (above 1000°C) and also remaining unaffected by aqueous solutions — minute leaching of materials.

In addition, the SSP offers the possibility of selectively separating the long-lived transuranics (elements heavier than uranium), as well as cesium and strontium from the radioactive waste. One of the problems associated with radioactive waste is the extremely long half-life (up to a million years) of some of the isotopes. If these isotopes could be separated from the bulk of the waste, then ultimate disposal would be easier.

In current nuclear fuel cycle planning, the high level waste is calcine-reduced to a mixture of metal oxides by spraying into a heated chamber. It is then mixed with silica and melted to form a glass. The system requires special handling of gases and very high temperatures. The SSP offers an alternative method of disposal requiring lower temperatures and more options as to final product.

Key to the Sandia system is the chemistry of the exchange materials. The ion exchange materials used in the SSP are formed by the reaction of metal (titanium, zirconium, niobium or tantalum) alkoxides with a base in an alcohol solution. The exchange principle can be compared to the action of a water softener. Radioactive elements react with the exchange material and are retained while harmless elements are released.

The SSP is insensitive to waste stream compositions and is equally applicable to any of the various types of reactor fuels used for commercial power generation including the liquid metal fast breeder fuels planned for the future.

Also, the SSP could possibly be used for the selective removal of cesium and strontium from concentrated salt solutions currently stored in massive quantities by the AEC.

Work on the SSP will be accelerated after a test next month at Oak Ridge National Laboratory using a Sandia-provided exchange column and high level radioactive waste provided by Oak Ridge. Results of this proof test will be compared with previous laboratory experiments and theoretical data.



Bob Dosch (5824)

The SSP program is centered in Chemistry and Materials Characterization Department 5820 under Dick Schwoebel. Dick Lynch, Division 5824 supervisor, is project leader.

Department personnel involved in the project include:

*Chemistry* — George Noles, Bennie Kenna, Ray Merrill, Phil Harrison, Ed Graeber, Herman Levine.

*Materials Science* — Dick Meyer, Art Lynch, Keith Johnston, Dale Clarkson, S.F. Duliere, Jim Nowak.

*Analytical Support* — Donnie Miller, Jerry Wolcott, Woody Woodworth, Bill Chambers, Fran Stohl, Gerry Gay.

# Afterthoughts

On the positive side--The sky is not falling. Last week the story of the year unfolded when a park ranger in Glacier National Park, irritated because a snowmobile and its owner had trespassed into a protected area of the park, unlimbered his .38 and shot the snowmobile to death. Pow! right up its intake manifold. The machine expired quietly, and the ranger now grapples with another problem --he's been relieved of his duties while an investigation is conducted.

\* \* \*

Greetings we can do without--"Have a good day!" we are beseeched by vacantly cheerful salesclerks and the professionally good natured. To be critical here is sort of like being critical of anti-pornography measures: obviously you're a grouch in the one instance or a slavering deviate in the other. But this greeting that exhorts--actually demands--that you trip lightly through the day's passage never rings quite true, and its essential vacuity is seen in its non-usage. How many times have you told a friend or your spouse to have-a-good-day?

\* \* \*

"Competence, like truth, beauty, and a contact lens, is in the eye of the beholder." The Peter Principle \*js



ANGIE GURULE (3141-1) is a Beta Aloosters Toastmistress. Angie, the first woman to join the previously all male club, believes that the ability to speak effectively is an important aspect of self-development.

## Events Calendar

- Jan. 10 — Albuquerque Symphony Orchestra, with Eileen Farrell, 8:15 p.m., Popejoy Hall.
- Jan. 10 — Club Culturale Italiano presents film "Ladri di Biciclette" (The Bicycle Thief), Reception Center, 146 Quincy NE, 8 p.m.
- Jan. 11 — Albuquerque Wildlife Ass'n. presents Wally Taber Safari Show, "Canadian Adventure" and "Rocky Mt. High," 8 p.m., Popejoy Hall.
- Jan. 11 — N.M. Ski Touring, Santa Barbara Campground, call Tom, 298-5257.
- Jan. 12 — Textile Crafts — Claire Morrison, weaver; Carol Bivens, stitcher; reception 1 to 3 p.m., through Jan. 31, 2021 Old Town NW.
- Jan. 13 — Yucca Art Gallery, Frieda Johnson, oil and water colors, through 26th, 1919 Old Town Rd.
- Jan. 13-16 — Guild Theater, "Black Orpheus," 265-0220.
- Jan. 15 — Audubon Films, "Twentieth Century Wilderness" by Tom Sterling, 7:30 p.m., Popejoy Hall.
- Jan. 15-Feb. 23 — Barn Dinner Theater, "Norman Is That You?" 281-3338.
- Jan. 18 — N.M. Mt. Club, Rio Grande Bottoms, 6 miles, Gulf Mart, 8:30 a.m.
- Jan. 19 — American Art Gallery, Bill Trequin, recent oils and water colors, through Feb. 22, 2246 Wyoming NE.
- Jan. 19 — N.M. Ski Touring, 3rd annual Albuquerque Avalanche, Sandia Crest cross-country race.
- Jan. 24-26 — "Macbeth," Classics Theatre Company, Popejoy Hall, 8:15 p.m. on 24 & 25; 2:15 p.m. on 26. Reservations 277-3121.

## Letter to the Editor

Dear Sir:

It has come to my attention that many technical reports are being written in an understandable way, principally by spelling out phrases. If the technical staff would only study the USG disclaimer on the cover of every Sandia document "... neither the United States nor the United States Atomic Energy Commission ... makes any warranty, express or implied, ... for the accuracy ... or usefulness of any information. ...," they would realize that the purpose of the report is not to convey information. No, the purpose of the technical document is to impress others with our almost incomprehensible degree of specialized knowledge. This purpose can best be accomplished with the aid of TLC.

The glottochronology of the language has already produced such masterpiece TLC's as: USA, AEC, and BTL. These are so well

known as to be of no help in establishing the desired obfuscation. Some misled authors spell out the phrase upon first use (TLC — "three-letter code") and, when coupled with a legible signature, project the image of a high-school theme unworthy of the product of EAP, TDP, GEP, DSP, UPT at SLA or SLL. One exception, where the spelling out of the phrase is profitable, is when the TLC will never be used again (NUA). Looking for the nonexistent repeat distracts the reader from realizing how little your report actually says.

TLC's should be used as frequently as possible. Never use FLC's. One has only to observe the falling star of NASA or recall the shame of CREP to forswear FLC. TLC's such as UN or WE are pure lexiphanicism and should be introduced only by top executives or senior authors with more than 25 incomprehensible articles and reports published. Double-meaning use in the same sentence, however, is admirable; e.g., IC's are not made in the IC's, or MS doesn't have an MS from MIT. The best TLC's are those you create, but common TLC's used in their second mode (without definition) provide variety; e.g., ALO (Albuquerque Light Opera) or DOD (Department of Development).

Abstracts, which most Sandia authors feel must be extremely short, are the perfect place to establish your skill with TLC. The following is a model:

EET's Using HMX, RDX or CDF

A crash program is underway to replace the CDU by an EET before FPU. Appropriate PZT is available; however, HMX, RDX and CDF may be subject to recrystallization in the STS. TGA, DSC, SEM, TLC (thin-layer chromatography) and POW have been applied as well as measuring VOD versus RH. TMS schedule will be supported with extensive MXP.

One caution: Your abstract may be highly classified, even SRD.

Sincerely yours,  
RSC - 2400

## LAB NEWS

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### SANDIA LABORATORIES

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&

lorena schneider reports on livermore

## Sympathy

To Clarence Sandy (9533) on the death of his father-in-law in Miles City, Mont., Dec. 14.

To Kyle Williams (3646) on the death of his father-in-law in Albuquerque, Dec. 19.



Donna Mitchell



Gail Bryan



Carol Verity



Cathy Banks

# LIVERMORE NEWS

VOL. 27, NO. 1

LIVERMORE LABORATORIES

JANUARY 10, 1975

## Inquiring Reporter

### Is Ms. an Improvement?

*Dorene Allen, directorate secretary (8100)* — It's really no one's business what status you are, so Ms. can be convenient. I usually use Mrs. because I've been married and have a daughter. Recently, though, I've found myself tempted to switch to Ms., perhaps because I'm a little older and don't want to say Miss, yet Mrs. is too confining. There should be something — but I'm not satisfied that Ms. is the answer.

*Cathy Banks, budget analyst (8213)* — Forget the title Ms. When I sign my name, I don't include Miss. I'm not ashamed that I'm a Miss, nor would I be ashamed if I were a Mrs., but to me the in-between indicates I don't want to be either. I happen to be an individual. Women are trying to improve their status, and some things they're doing are constructive, but some things are too radical. To me it appears that Ms. is designed just to set themselves apart.

*Shirley Archable, division secretary (8254)* — I love the title Ms. The fellows have Mr. so you don't know their marital status, and I'm for equal treatment. I'd rather not have people know I'm single, but if I were married I'd still prefer Ms., especially for business purposes. It eliminates guesswork. Ms. is the way to go.

*Donna Mitchell, mechanical technician (8314)* — I've been married only a few months and the newness hasn't worn off, so I like being a Mrs. and having my husband looking after me. When I was single and attending college, however, I used Ms. From a safety aspect, I preferred not having people know I was living alone. It also helped when I'd apply for credit. I felt more independent and equal to a man, able to get along in the world by myself.

*Pauline Kirk, drafting clerk (8431)* — Ms. is definitely not an improvement. Being married I prefer Mrs., but women don't have to get married anymore, and Miss isn't a dirty word at all. Many women used to marry because society expected it of them. I'm not a women's libber, but I've seen some pretty poor marriages for the wrong reasons. Women who can support themselves and who want to be independent, possibly dating and having companions, are entitled to their life style and are not to be criticized for it.

*Gail Bryan, computer tape librarian (8323)* — For someone who's divorced, Ms. is probably good since it gives her greater opportunity to start a new life. But I prefer to go by my first name; rather than Mrs. Jon Bryan, I like Gail Bryan, with no title at all. True, I've become Jon's wife, but I'm still an individual myself. In a way, being your own self is part of the liberation movement. Our address labels are Jon and Gail Bryan.

*Carol Verity, technical writer (8266)* — A title doesn't matter; it's the person that counts. On the other hand, a man doesn't distinguish his marital status and Ms. gives us equivalent status. If I were getting married now, I would seriously consider keeping my maiden name because I found that one of the most difficult adjustments in marrying was losing my name. All of a sudden I became somebody else's property and my identity sort of wavered for a while. However, it doesn't bother me any longer that people address me as Mrs. instead of Miss.

## Take Note

Classification analyst Frank Halasz (8266) was among the 3000 men and women who passed recent bar examinations in California. He was admitted to practice law in the state during ceremonies in San Francisco on Dec. 18. For four years Frank attended evening law classes at John F. Kennedy University in Martinez, Calif., and last June was awarded a juris doctor degree. Previously he received a BS in physics from City College of New York in 1960. Joining Sandia/Albuquerque in August 1965, he transferred to Livermore in July 1970.

## Congratulations

Mr. and Mrs. Jim Lathrop (8322), a daughter, Julie Annette, Nov. 24.  
Christy Wilson (8423) and Kent Harris, married in Merced, Calif., Nov. 16.

## Sympathy

To Art Hull (8158) on the death of his father in Livermore, Nov. 5.  
To Pat O'Brien (8161) on the death of his brother in Ft. Dodge, Iowa, Dec. 1.  
To Ed Williams (8156) on the death of his stepfather in Clarkston, Wash., Nov. 24.



Shirley Archable



Dorene Allen



Pauline Kirk

## Rocky Watches Football — But Not From the Stands

If you're a fan, a pleasant activity during the holiday season is watching the bowl games — the best of college football. One regional game of interest was the Fiesta Bowl, played in Arizona State University's Sun Devil Stadium at Tempe. Brigham Young University, winner of the Western Athletic Conference (WAC), was defeated by the Cowboys of Oklahoma State University of the Big Eight Conference.

One of the six officials at the Fiesta Bowl was Sandia's "Rocky" Arroyo, an engineer in Plant Engineering Planning Division 9751. Officials are assigned to specific games by the respective conference commissions, and, for



Rocky Arroyo (9751)

this game, three officials represented the Big Eight and three the WAC. Rocky is a line judge and his primary responsibility is to watch the sidelines for out-of-bounds play. He and the head linesman share sidelines responsibility as well as off-sides and illegal procedure calls.

"Concentrating on my responsibilities doesn't really let me follow the game," Rocky says. "Many calls made by officials have to be judgment calls and the only way to ensure that we make the best possible decision is to be in the right field position for each play. Following every game, an official observer and the referee, who is overall administrator of the officials, hold a meeting and everyone's calls are evaluated. Too many mistakes and you won't be officiating."

Rocky has been officiating at New Mexico high school games for 20 years and has been a WAC football official for 10 years. He officiated at 10 WAC games this past season and two of those were regionally televised. Officials are not allowed to work their hometown games; thus, Rocky never officiates at a UNM game, but instead travels to other states. "Other guys go fishing for the weekend," he says, "but I go to football games. I leave on Friday and come home on Sunday, at least 9 or 10 games a season."

During Thanksgiving weekend Rocky worked a game in Hawaii between Rutgers University and the University of Hawaii. The Hawaiian school has asked to be admitted to the WAC and as a courtesy the commission sent two WAC officials to represent them at the game.

Rocky has been at the Laboratories for 15 years. He belongs to various civic organizations and heads the Credit Committee for the Sandia Federal Credit Union. "Officiating is a hobby with me," Rocky says, "and I do it because I enjoy it."

## Take Note

Francine Neff, Albuquerque resident and recently appointed United States Treasurer, has presented a special Treasury Award to President Morgan Sparks. Mr. Sparks served as 1974 Albuquerque Community Savings Bonds Chairman. A goal of 4000 new savers was met early in July.

\* \* \* \*

Out-of-Hours Course catalogs for Spring '75 are now available in the yellow boxes near the gates. The catalogs include a wide range of self-development courses, plus courses which are part of the Technical Institute (TI) Equivalency program; the latter include some in-hours time and director's approval is required. The enrollment period for all courses ends Jan. 17, with classes beginning Feb. 3.

\* \* \* \*

A year or so ago, LAB NEWS carried an article on The Storehouse, a non-bureaucratic charitable organization and, since that time, Sandia retiree R.L. Probst has become interested in the project. He writes: "The Storehouse . . . is located in the old Albuquerque High School building, North Broadway entrance. All items collected are distributed to the needy or offered for sale at a very modest price . . . My small role consists of repairing, free of charge, any old watches collected for distribution or sale. I am also willing to accept a limited amount of watch repair work at greatly reduced prices from retirees and older Americans on fixed incomes."

We can attest to the need of The Storehouse for donations of most anything, but especially to the need for people, like Mr. Probst, to help out. If you're handy, The Storehouse usually has a roomful of appliances that could be restored to a useful life with a little work. Call on 843-6491 if you're interested.

\* \* \* \*

### To Be Healthy

## Here Come The Flu Bug

By Dr. A. S. Verdesca,  
Medical Director, WE

Winter is here and winter, unfortunately, is almost synonymous with flu.

Influenza virus has a peculiar characteristic. It has the natural ability to change constantly so that as soon as we become resistant to one form, a new one appears. This makes it unlikely that the medical profession will ever develop a permanent vaccine against influenza.

That is why periodic vaccinations are recommended during epidemic years for most people, excluding those who are allergic to feathers, eggs and other fowl products since the virus is grown in eggs and can cause a severe allergic reaction.

Even though it may not be an epidemic year, influenza viruses don't disappear. They are constantly in the environment and can cause serious illness in persons who are usually susceptible.

Therefore, yearly vaccinations, even in non-epidemic years, are recommended for people with chronic respiratory or cardiac disabilities such as chronic bronchitis, emphysema, history of rheumatic fever with residual cardiac damage, etc.

Most people over 55 should also be considered for prophylactic injections against influenza.

Another group of persons that should get flu shots is pregnant women. In this case, the vaccines are killed-virus vaccines, which, as the name implies, contain no live virus. There is thus no danger of inadvertent infection from the mother to the fetus.

An unusual complication of influenza is influenza pneumonia. In most cases influenza is a mild condition with some chills and fever, generalized aches and pains (most pronounced in the back and legs), headaches and weakness. Often there is a sore throat, a dry cough, and sometimes nasal congestion.

While all of these symptoms can cause discomfort, they are usually not serious. But if the respiratory symptoms, or an increasing severity of cough, or fever of 101° persist for more than five days, then it is considered a case of serious influenza pneumonia.

Because influenza is caused by a virus, there is no antibiotic of any value in curing it. A new medication, amantadine, has been proposed as a preventive for certain forms. Unfortunately, you have to take it by mouth twice a day for at least 10 days and sometimes up to 30 days.

Generally, in an attack of acute complicated influenza, it's a good idea to get bed rest for a day or so until the temperature has become normal. A light diet with some extra fluids is also helpful. Aspirin helps lower the temperature and relieve the discomfort of the muscle and back aches.

## SLA 1975 Holidays

Here are holidays Albuquerque Sandians will observe:

New Year's Day  
Washington's Birthday — Monday, Feb. 17  
Memorial Day — Monday, May 26  
Independence Day — Friday, July 4  
Labor Day — Monday, Sept. 1  
Veteran's Day — Monday, Oct. 27  
Thanksgiving Day — Thursday, Nov. 27  
Christmas Day — Thursday, Dec. 25  
plus a "designated holiday" of your choice from the following:  
Employee's Birthday  
Employee's Service Anniversary Date  
Martin Luther King's Birthday — Wednesday, Jan. 15  
Good Friday — March 28  
Yom Kippur — Monday, Sept. 15  
Columbus Day — Monday, Oct. 13  
Friday after Thanksgiving — Nov. 28

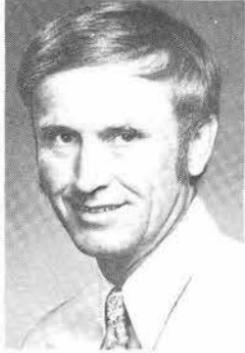
When the designated or regular holiday falls on Saturday, the preceding Friday is observed as the holiday; when either falls on Sunday, Monday is observed as the holiday.

In addition, when Dec. 24 falls within a work week (as it does this year) employees are granted four hours holiday time.

# Credit Union Reporter

By Earl Simonson  
President

## Year End Report



Copies of the annual report will be available after Jan. 17 at the Credit Union, and we urge your study of the report. The Board of Directors reports that the economic condition of your Credit Union remains healthy, with over \$19,500,000 in assets. At our December meeting, the Board of

Directors declared a quarterly dividend at the annual percentage rate of 6½%. Total dividend paid is \$263,000.

### Income Tax Information

Your fourth quarter statement, to be mailed in a few days, includes all of the information needed for income tax purposes. Dividends, which IRS regulations stipulate be reported as interest income, appear as "Year to Date Dividends" in the lower portion of the statement, No. 1 (see illustration). Your interest expense appears over "YTD Int/Fin. Chg. Pd On All Loans" on the statement, No. 2. (If you have more than three loans, you will receive additional statements and will need to add the amounts shown in this box.) If you have questions, call the Credit Union.

Fourth quarter dividends, paid on Jan. 1, are included on the lower margin of the statement, No. 3. Also, the statements do not

THE FINANCE CHARGE ON OPEN END CREDIT IS RATE OF % PER MONTH, ANNUAL PERCENT TO EACH LOAN AMOUNT IN THE BALANCE COLUMN THAT BALANCE WAS OUTSTANDING. (RATE APP)

2	1	
YTD INT/FIN CHG PD ON ALL LOANS	YEAR TO DATE DIVIDENDS	ENDING SHARE BALANCE

FORM 998

\*TRANSACTION CODES  
 FC - FEE CHARGE  
 SD - SHARE DEPOSIT  
 SN - SHARE DEPOSIT NEW ACCOUNT  
 SW - SHARE WITHDRAWAL  
 PP - PRINCIPAL PAYMENT  
 LN - NEW LOAN  
 LX - LOAN PAYMENT, EXCESS TO SHARES  
 LP - LOAN PAYMENT

SUFFIXES TO THE ABOVE: C - CHECK, J - JOURNAL ENTRY.

3  
 IP - INSURANCE PAYMENT  
 PDP - PAYROLL DEDUCTION POSTING TO SHARE  
 PDL - PAYROLL DEDUCTION DISTRIBUTION TO LOAN  
 PDS - PAYROLL DEDUCTION EXCEPTION ON LINE  
 \$ DIV. POSTED 75/01/01

show Dec. 31 monthly payroll transactions because the December payroll was not received until Jan. 2, and was posted on that date.

### Annual Meeting

The 27th Annual Meeting will be held Jan. 23 at the Coronado Club. Door prizes and beverages are offered, and drawings will be held for a color TV and microwave oven. Principal business is to fill four Board openings and one Credit Committee opening. The meeting starts at 5:15 p.m., but be sure to sign in upon arrival. Many members have dependent accounts for their spouses and children, but dependents are not qualified voting members, nor are they eligible for the drawings. Plans for the Livermore annual meeting are not complete, and the date and location will be announced later.

## Recreation Notes

### FUN & GAMES

**Sandia Bowling Ass'n.** — A singles, doubles and four-man team handicap tournament is scheduled at Fiesta Lanes on Jan. 25-26. The team event will be bowled on the 25th and singles and doubles on the next day. Check-in time is 12:45. If you need a doubles partner or additional bowlers for a team, contact Dora Montoya, ext. 4-6444, or Leo Bressan, ext. 4-7933. In the doubles and singles tournament last month, Joe Stiegler (9480) and wife Jody won the Class A doubles event. Joe rolled a 712 scratch — his first 700 series.

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**Sandia Runners Ass'n.** — From SRA a field of four entered the El Paso-Juarez Marathon late last month. Pete Richards (5132) turned in an excellent performance with 2:48 time for the 26 miles, finishing first in the 35-44 bracket and ninth overall (out of 104). Mark Percival (2411), Irv Hall (1643) and Bob Jeffrey (1231) followed.

\*\*\*\*

**Skiing** — Don Schroeder (2442) is at it again, this time organizing a three-day trip to Purgatory for Jan. 25-27. It features a steak dinner, discounted lift tickets, a little wine, some fun races, and Denny Gallegos on his guitar. And skiing. Don has to know by Jan. 16 if you plan to go.

How to stay out of the wind riding up on a cold chair lift: carry a city trash bag (flat and small when folded) and slip it over your head. Remove the trash first.

## Consumers Arise — Make a Phone Call

Next time you feel you've been had, and you can't get any satisfaction from the guy who sold you the product or service, you can unload your grievance upon the federal government. The Department of Health, Education, and Welfare has compiled a list of officials who will listen to your complaint, offer a little sympathy, maybe even do something about it. You can write to the official if you prefer not to phone.

### Food

Nancy Steorts  
Special Assistant to the Secretary for  
Consumer Affairs  
Agriculture Department  
Washington, D.C., 20250  
Telephone: 202-447-3165

### Air Travel

Jack Yohe, Director  
Office of the Consumer Advocate  
Civil Aeronautics Board  
Washington, D.C., 20428  
Telephone: 202-382-6376

### Consumer Information

David Peterson  
Director, Consumer Information Center  
General Services Administration  
Washington, D.C., 20407  
Telephone: 202-343-6171

### Product Safety

Mary Kay Ryan  
Special Assistant for Legal Matters  
Consumer Product Safety Commission  
5401 Westbard Ave.  
Bethesda, Md., 20207  
Telephone: 301-496-7377

### Food, Drugs, Cosmetics

Dr. John Harvey  
Senior Educational Director  
Office of Consumer Affairs  
Food & Drug Administration  
5600 Fishers Lane  
Rockville, Md., 20852  
Telephone: 301-443-3170

### Advertising, Credit, Fraud

J. Thomas Rosch, Director  
Bureau of Consumer Protection  
Federal Trade Commission  
Washington, D.C. 20850  
Telephone: 202-962-0151

### Older Americans

Decker Anstrom  
Assistant to the Commissioner  
Administration on Aging  
Health, Education & Welfare Dept.  
Washington, D.C. 20201  
Telephone: 202-245-0724

### Housing & Urban Development

Wilbur Jones  
Consumer Affairs Coordinator  
Housing & Urban Development Dept.  
Washington, D.C. 20410  
Telephone: 202-755-7976

### Environment, Resources, Parks

Ann Richardson  
Special Assistant to Assistant Secretary for  
Program & Budget  
Interior Dept.  
Washington, D.C. 20240  
Telephone: 202-343-7785

### Bus & Train Travel

Warner L. Baylor  
Consumer Affairs Officer  
Interstate Commerce Commission  
Washington, D.C. 20423  
Telephone: 202-343-4141

### Work Regulations, Wages, Retirement, Pensions

Joanne Gordon  
Special Assistant to the Secretary  
Labor Department  
Washington, D.C. 20210  
Telephone: 202-961-2027

If you have any question about any program or agency of the federal government, you may also call a local number — the Federal Information Center on 766-3091. In Livermore, call 273-0111 (Oakland).

## '74 Fire Record Called Pretty Good

Ray Cohrs (9751), Sandia Labs fire protection engineer, reports that 1974 was "a pretty good year."

"We experienced 13 fires," Ray says, "but the property loss was only \$43."

Primary reason for the small property loss is that six of the fires occurred in remote testing areas and only range grass was burned. The other fires were minor in nature and were quickly extinguished by fast-acting Sandians.

Largest loss — \$25 — occurred last October when gasoline collected in the crankcase of a gasoline powered welding generator. During startup of the generator, the fuel was ejected from the crankcase vent and ignited, causing the damage.

Other fires ranged from a malfunctioning starter switch to spontaneous combustion in the disposal pit. A real surprise occurred when an automatic timer for a coffee pot energized the power cord, short circuited, arced and ignited a paper napkin and a plastic tray. The cord was not connected to the coffee pot at the time. Damage was less than \$5.

"The record tells us two things," Ray says. "The hazard of fire is constantly with us and that Sandians are aware and responsible."

### Congratulations

To Mr. and Mrs. Kip Stanley (3646), a daughter, Jennifer Anne, Dec. 11.

# feed **back**

To get a response to your comments and questions about Sandia Labs, complete a Feedback form (available near bulletin boards) and return it to the Feedback administrator. The substance of questions and responses of wide interest is published in LAB NEWS.

*Q. With layoffs all over the United States, I can't help but feel that Sandia may have to do the same. Why couldn't we volunteer to have our wages frozen for, say, two years or whatever time it might take to get over the crisis? I'm sure a lot of employees would rather have that than no job at all.*

A. Your willingness to help alleviate the current economic stress by volunteering to have your wages frozen is a refreshingly unselfish approach to this serious problem. Many potential economy measures are now being reviewed, and your proposal will certainly be thoroughly examined.

Whether or not we could expect a large amount of support for such a proposal or whether such an action would be in the interests of the Labs and of its employees are questions to be considered.

The Laboratories has a continuing heavy obligation to fulfill its responsibilities in the weapons development and energy area. We must remain economically competitive if we are to hold our staff together and attract new talent to Sandia. Unless such a freeze was in effect at the companies with whom we compete for talent, Sandia would probably lose heavily among those employees engaged in our mainstream technical activity as well as among support and administrative personnel.

Also, since there is no foreseeable freeze on prices and, as a result, the "necessities" will probably continue to cost more, it is unlikely that Sandia employees alone would accept the burden of a wage freeze.

R. J. Edelman - 4200

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*Q. Are there any plans to assign division secretaries to line organizations where they would report directly to division supervisors?*

A. Division secretaries (30 series) in 3600 and 3700 (nontechnical) have been administratively assigned to the divisions where they work for several months. An experiment in 4700 (technical) is underway and will be evaluated in June 1975.

Each Vice President will decide the best method of operation for his organization.

R. J. Edelman - 4200

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*Q. In view of the big increase in health insurance premiums, it seems only fair that a 3-tier insurance plan be available to Sandia employees:*

1. One premium for employee only
2. One premium for employee and spouse
3. One premium for employee / spouse / any number of dependents.

*Has such a plan been considered and if not, why not? Under the current set up, those with few or no dependents are carrying those with many dependents.*

A. For a number of years Sandia's Health Care Plan with Equitable has been structured on the basis of a two step premium rate (single coverage and family coverage). This rate

structure was in effect during the time that employees were paying a portion of the premium charges and has continued since 1970 when Sandia began paying the full cost of the health care plan. Early in Sandia's existence there was a three step rate (employees only, employees and spouses or one dependent, and employees and more than one dependent). The change was made from a three step to a two step rate primarily because of the recognition that in a family situation most people tended to progress from a family status with a two member family to a family status involving more than two members. The theory is that through a person's career at Sandia any inequity for a two member family would be balanced by the subsequent inclusion of additional dependents.

We are aware that some health plans do provide a different rate for a two member family and the more than two member family. This concept of a three step rate structure can and usually does lead to the possibility of other rates based upon the number of dependents that are involved in a family, i.e., the rate for a five member family would be more than that of a three member family. The bookkeeping and administrative details, even though possible, are highly complicated. Further, a reasonable argument could be presented stating that a two member family premium would not necessarily be lower if such a group consisted primarily or was weighted in favor of an older population when compared to the more than two member family generally comprised of younger employees and associated families. As we reviewed our premium contribution basis for calendar year 1974 and again for 1975, the decision to maintain the two step rate structure has been reaffirmed. Without a compelling reason for change from the two step basis, the theory which caused us to adopt such a structure still seems reasonable.

The concept of two step versus three step rates was reviewed in detail during development of the HMO programs. Our information indicates that LBHCP is continuing the two step structure with the other groups with whom they have contracts. MASTERCARE has indicated some interest in a three step rate structure because of a concern that only such families were utilizing MASTERCARE services. However, they have not furnished evidence to support this concern.

R. J. Edelman - 4200

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*Q. The car pools seem to have gone the way of all passing fads, attesting to the noticeable vacant reserve spots in front of Bldg: 800. I can cite a specific lone driver who now parks in a reserve space and who formerly parked next to me. To conserve energy I joined the limousine service nine months ago (bus not available in the Southeast Heights). The service went rapidly down from 12 to eight regular passengers and two weeks ago the fare was raised to \$6.00. I now drive and park across Main St., but I think it's time Sandia reevaluate reserved parking lanes and so many lone drivers utilizing the reserve spaces.*

A. In a recent survey of 480 reserved spaces, 85 vacancies were found, which is under 18%. Of the 85 vacancies, seven pools admitted they didn't deserve the spots and gave them up. Another seven spaces were temporarily unassigned. The remaining 84% of the 85 were vacant for reasons as follows:

1. 32% - Pool driver on vacation, ill, or on a business trip; riders came by bus or caught another ride.

2. 18% - Running an errand at the time check was made.

3. 15% - All in pool were on vacation, on a trip, or ill; e.g., husband and wife on vacation.

4. 12% - Parked elsewhere (space was too small for camper, temporarily assigned to Area V).

5. 7% - Used space only part time; Security checked to see if they should be reassigned.

Surveys to determine authorized use of these spaces will continue to be made. Concerning lone drivers: there are, in fact, quite a few car pool drivers who discharge their passengers at another location and thus arrive alone at the parking slot.

L. J. Heilman - 9500

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A comment: Feedback has included so many questions not in accord with my opinions that I have decided to write a comment of my own. Surely there must be more people who feel as I do, even as there are people who agree with the others. For one thing, it seems that company loyalty has been forgotten, or maybe the schools don't mention that as a quality of prospective employees any more. I have been a division secretary for several years and have been given consideration many times for promotion to department secretary. Having 24 days vacation each year and sick leave benefits certainly have been a great help when I have needed them. Sandia's in-hours and out-of-hours training have, I feel, made me a better secretary. My salary is more than twice as much as when I started, although I realize living expenses have gone up. It is doubtful I could find employment in Albuquerque outside the scientific or AEC community where the salary and benefits would compare. I would even challenge those "unsatisfied" employees to look around, and if they can do better outside, go ahead and get another job. It would be better than staying around trying to demoralize the rest of us.

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*Q. Are 80-series employees eligible for the 15 minute morning break and the 10 minute afternoon break?*

A. Because the work performed is not generally of a confining or repetitive nature, there are no formalized break periods for 80-series employees or for staff employees. If you feel that your assignment necessitates a formal break period, you should discuss the matter with your supervisor.

R. J. Edelman - 4200

# ERRR — Organizing for Energy

New Mexico these days has a couple of good things going:

- abundant energy resources (coal, gas, uranium, oil, solar, geothermal, and, of course, wind), and
- much scientific talent (LASL, the Universities, the military groups, and, of course, Sandia).

And a problem: lack of the coordination necessary to exploit the two resources.

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By recent law, the State's Bureau of Educational Finance is to provide that coordination. Funds — \$2 million — have been earmarked for:

1. making "a comprehensive, continuing survey of all federal and private-sector energy-related research and development and other funding";
2. identifying "state and nonstate controlled research and development facilities in New Mexico and the research capabilities of each facility; and"
3. making "information available to state and nonstate controlled research and development facilities in New Mexico concerning energy research and development grants and other funding availability."

The effort takes the form of a sort of clearinghouse, the Energy Research Resource Registry (ERRR), designed to encourage a high degree of cooperation among the institutions and people involved (and to discourage some of the infighting that has been known to ensue when two groups feel entitled to the same grant).

But ERRR is more than a "let's cooperate" venture. It is now developing a Registry of Information on all New Mexico energy researchers and their skills, and on all the state's R&D organizations, their capabilities, and current programs.

Such a Registry will permit principal investigators and project directors to identify easily other researchers, whatever their discipline, who are working in similar areas.

Another tool is a library of information on



Sharla Vandevender (4734)

opportunities for researchers on national energy problems. "Too often," says Don Schuster (4700), Sandia's energy director, "a researcher isn't aware of a grant application deadline or other research opportunity until it's too late. The library and its newsletter could be of major benefit here."

ERRR is now building its data base and preparing for computerization. Physically it's centered at UNM under Paul Silverman, Vice-President of Research. Pres. Sparks has appointed Sharla Vandevender (4734) Sandia coordinator.

Sharla is currently describing Sandia's capabilities and programs for the Registry. The individual researcher file will be compiled at UNM through professional organizations. Sandians currently or potentially involved in energy research but who are not members of any such organizations may request forms from Sharla at 4-6796.

Says Sharla, "Sandia has much to offer the ERRR — and much to gain. We've proved we can do good work and, of course, we have a great deal of talent. The ERRR will help us steer away from a parochial outlook and should open some new doors for utilization of that talent."

# Recovery of Resources Topic of Meeting

Many Sandians are expected to take part in the March 6 and 7 ASME Symposium, which is focused on the recovery of resources. It will be held in Albuquerque at the Hilton Inn.

The symposium program notes that recognized authorities have been invited to present work in the areas of solar heating, wind power, mining and excavation, hydraulic transport, geothermal power, oil and gas well recovery, the in situ recovery of oil shale, coal and tar sands.

Steve Burchett (1541) is handling local arrangements and may be contacted for further information about the symposium.

## Authors

G.W. Arnold, G.B. Krefft (both 5112), and C.B. Norris (5513), "Atomic Displacement and Ionization Effects on the Optical Absorption and Structural Properties of Ion-Implanted Al<sub>2</sub>O<sub>3</sub>," Vol. 25, No. 10, APPLIED PHYSICS LETTERS.

B. Granoff (5843), "Kinetics of Graphitization of Carbon-Felt/Carbon-Matrix Composites," Vol. 12, No. 4, CARBON.

J.R. Asay (5167), "Shock-Induced Melting in Bismuth," Vol. 45, No. 10, JOURNAL OF APPLIED PHYSICS.

J.B. Gerardo (5210) and A.W. Johnson (5216), "Photoattenuation in the Extreme Red Wings of Xe and Kr Resonant Lines," Vol. 10, No. 4, PHYSICAL REVIEW A.

S.M. Myers (5111), "Ion-Backscattering Study of LiOH-to-Li Conversion on a LiH Substrate," Vol. 45, No. 10, JOURNAL OF APPLIED PHYSICS.

M.E. Kipp (5162), et al., "Effect of Surface-Compression Strengthening vs. Reduction in Flaw Size on Thermal-Stress Resistance of an Na<sub>2</sub>O-CaO-SiO<sub>2</sub> Glass," Vol. 57, No. 10, JOURNAL OF THE AMERICAN CERAMIC SOCIETY.

C.F. Melius (5211), "The Charge Exchange Mechanism in Metal Vapor Lasers," Vol. 7, No. 13, JOURNAL OF PHYSICS B.

### Computing Colloquium

Topic:

"Characteristics of the CRAY-1 Computer

Speaker:

Seymour Cray, Pres., Cray Research, Inc.

Time:

1:30 p.m., Jan. 21 (live, no video)

Place:

Bldg. 815 (outside tech area)

## JUNK • GOODIES • TRASH • ANTIQUES • KLUNKERS • CREAM PUFFS • HOUSES • HOVELS • LOST • FOUND • WANTED • & THINGS

CLASSIFIED ADVERTISING  
Deadline: Friday noon prior to week of publication unless changed by holiday.  
A maximum of 125 ads will be accepted for each issue.

RULES

1. Limit 20 words
2. One ad per issue per person
3. Must be submitted in writing
4. Use home telephone numbers
5. For Sandia Laboratories and AEC employees only
6. No commercial ads, please
7. Include name and organization
8. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin.

### MISCELLANEOUS

- SKI BOOTS, Lange Pro model, Flo, fits shoe size 9-1/2, 40; Raichle boot within shell, fits 8-1/2, \$20. Horton, 298-4449.
- FOUR G78-15 tires, \$50 total. Pope, 255-6702.
- 5-DAY ALL-Lift Pass at Park City, Utah, good '74-'75 season, make offer. Aeschliman, 281-1227.
- DOUBLE REG. quarter horse, buckskin gelding, 13 yrs. old, Weiscamp breeding, proven 4-H project, \$350. Constant, 281-5670.
- PENTAX ASAHI 35mm single

lens reflex camera w/Soligor 35mm 49° lens, f2.8, 1 to 1/1000 sec., includes Pentax meter & soft case, \$115. Hachigian, 298-1414 after 6.

MOBILE HOME, '69 Biltmore, 12 x 44, furnished, 1 bdr., twin beds. Luhrs, 281-3875.

MICROCRAFT microscope set, \$5; 21" B&W TV, operational, \$5. Dieter, 255-8056.

PIGS, 2 month, \$20; 3 month, \$25; 4 month, \$30. Butler, 1509 Mora Place SW, 873-2867.

PHILCO refrig., 11.7 cu. ft. capacity, freezer top section, white, no scratches. Ricker, 3201 Utah NE, 298-2191.

BED FRAME, twin to full size, \$5. Hickman, 298-3804.

SOUND movie camera, Fairchild 8mm w/projector. Ward, 299-0944.

MAN'S size 10-1/2 Kastinger ski boots, used twice, \$40. Mason, 296-7267.

TWO RUPP snowmobiles, Snowsports & trailer, \$1000.

Shively, 867-5439.

LADY'S NORDICA ski boots, size 7-1/2N, \$30; man's Lange ski boots, size 12, \$30; new professional Star baton, \$5; Sears Astronomical telescope, 75x50mm, \$10. Green, 296-3889.

14" WHEELS from '65 Mustang, 5-holes, \$4 ea. or 4 for \$15; 8mm Keystone movie camera, \$35; 21" color TV, \$85. Chandler, 296-3323.

26" 3-SPEED girl's bike, Hawthorne, \$25; model 50 Kodak Instamatic pocket camera, \$45. DeLollis, 299-5384.

PAIR snow tires, 5.60x13, fit Datsun 6K, \$20; antique Philco '32 cathedral-style radio, works fine, \$35. Van Den Avyle, 898-6474.

SOUND CRAFTSMEN Graphic Equalizer, Tolex covered case, small pre-amp. built in, \$225. Hubbard, 299-7818.

TAPE RECORDER, Wollensack, some reels & tape, \$35; Hart

Javelins, 210's, Salomon bindings, \$20. Shunny, 265-1620.

QUEEN SIZE mattress, foundation & frame, Spine-A-Line by Sleep Aire, \$100. Shew, 299-8045.

WHITE French provincial single dresser w/mirror. Peabody, 296-6239.

TWO Swedish-made barrel-swivel chairs, beige upholstery, aluminum pedestal, \$15 ea. or both for \$25. Taylor, 6500 Kelly NE, (Jade Park), 821-2964.

SNOW TIRES, Sears Dynaglass X.S.T., E78x14 blackwalls; 5-hole Ford or Chrysler 14" wheels; mounted, balanced, \$50 set. Keeling, 268-2275.

PUPPIES, half Basenji, 6 wks. old Jan. 17. Dillon, 877-7771.

good. Souder, 281-3121.

TO COPY OR BUY, owner's manual for '71 Datsun 1200 sedan. Joseph, 299-6989.

WEIGHT lifting & pull exercising equipment. Fisher, 881-8072.

13" SNOW TIRES & chains. Sheives, 298-9341.

CAMPBELL SOUP LABELS for school charity project. Russell, org. 1125.

### TRANSPORTATION

'65 INTERNATIONAL TRAVEL-ALL 1200, 4-spd., PB, PS, AC, positraction, trailer package, \$750. Kepler, 298-5652.

'70 LTD FORD, \$975. Hendrix, 299-8872.

BICYCLE, boy's 10-spd., 24" Schwinn, chrome fenders, speedometer, 2 yrs. old, \$70. Diem, 256-1305.

### WANTED

ENGLISH saddle, must be in nice condition; '66 or '67 VW Squareback body, must be

### FOR RENT

BEGINNER'S flute. Condit, 281-3788.

●ATHENS●C-CLUB●PEELERS● JAMBALYA●THUN●KINDER SKI●SLIDES●MARSHA

FRIDAY	SATURDAY
10 — HAPPY HOUR NEW ORLEANS STYLE SEAFOOD Adults \$2.75 Under 12 1.75 Thomas & Marsha On Stage MIDNIGHT SPECIAL	11 — SOUL SESSION 8:30 - 12:30 SQUEEZER Happy Hour Bar Members Free Guests \$1
17 — HAPPY HOUR GERMAN BUFFET Adults \$2.95 Under 12 1.95 Ruiz & Villa On Stage SHALAKO	18 — SHRIMP PEEL Dinner 6:30 Dancing 8:30 Members \$5 Guests \$6 UP COUNTRY

1975 — is the year to get the Happy Hour/Buffer habit. Tonight it's shrimp jambalaya, chicken gumbo, beef burgundy,

and more. But the price — just \$2.75. Next Friday sauerbraten, knackwurst, ham hocks, etc. Entertainment while you sup, then music while you dance.

IS — there a young (4-6) would-be skier at home: The Kinder Ski School at the Peak begins Jan. 12 for 6 Sundays, Jan. 14 for 6 Tuesdays, with option of full-day or half-day lessons tailored to the tots. Ski Club members should call Walt Westman at 881-0471 for discount info; others call the Ski School at 242-9052.

NOT — much time left to sign up for the Grecian Holiday; deadline is Jan. 17. Trip honcho Chet Fornero needs a few more signers to make the Athens-and-the-Isles jaunt possible. If you're wavering, waver positive — and soon. (Re: vacation time — it's use it or lose it by June 30.)

NEW — travel package puts you on (or in) Lake Thun Aug. 18-26. Hiers to the atlas

will find Lake Thun is in Switzerland, surrounded by mountains and forests, castles and cathedrals, watches and wine. Air fare, seven nights at a resort hotel, and more for \$499 (dbl occ) plus taxes; air fare alone is over \$900 — it's a good deal. Members and families only.

IT'S — closer to home but still fun: the Las Vegas (the one in Nevada) Outing Feb. 28-March 2. Air fare, Castaways Hotel, other goodies — a wild weekend for \$120.

A — Post-Mazatlan Get-Together gives trip alums a chance to show slides, exchange reminiscences, and cry a lot. 7:30 on the 14th.

RERUN — of the particularly popular Shrimp Peel on the 18th. All the jumbo Texas Gulf delicacies you can eat, plus dancing to let you work off the calories. If you have reservations, pick up tickets by tomorrow.

MORE INFO — 265-6791.

●MIDNIGHT SPECIAL●CASTAWAYS●GUMBO ●UP COUNTRY●MAZATLAN●VEGAS

Speakers

- H.C. Monteith (9344), "Reincarnation," Adult Fellowship Group, St. Paul's Methodist Church, Nov. 5; and "Biorhythm," Eldorado high school science survey class, Nov. 6.
- G.W. Hughes (9471), "The Metric System and the Citizen," Zia Elementary school science class, Nov. 7.
- R.W. Harrigan (5717), "Solar Energy," N.M. Environmental Health Assn., Nov. 9.
- R.P. Stromberg (5717), "Solar Energy Research," Carlsbad Potash Section AIME, Nov. 19.
- G.C. McDonald (9623), "The U.S. Industrial Change to Metric," ASME Seminar on International Engineering, Nov. 19.
- G. Cosden (3732), "Doing Business With Sandia," N.M. Electronic Representatives Assn., Dec. 6, Albuquerque.
- L.V. Rigby (200), "The Nature of Human Error," G.E. Management Assn., Nov. 20, Albuquerque.
- R.S. Blewer (2413), Invited Paper, "Capabilities of Proton Backscattering for Low Z Atom Detection in Solids," Seminar at the Calif. Institute of Technology, Nov. 20-21, Pasadena.
- W.G. Perkins (2413), "Studies of Hydrogen Diffusion and Permeation Through Metals," CTR Seminar, Nov. 26, Argonne National Lab.
- B.L. Butler (5844), "Composites from Space to Energy," Graduate Seminar, NMIMT, Nov. 26, Socorro.

- D.G. Schueler (5113), "Solar Energy Research at Sandia Laboratories," Stanford Univ. EE Graduate Seminar, invited talk, Dec. 5, Stanford, Calif.
- G.A. Samara (5130), "The Study of Ferroelectric and Antiferroelectric Properties at High Pressure," Research Colloquium, Institute of Solid State Physics, Univ. of Tokyo, Dec. 5; and "The Study of Structural Phase Transitions at High Pressure: Soft Phonon Modes," Research Colloquium, Electrotechnical Laboratory, Dec. 6, Tokyo, Japan.
- C.F. Melius (5211), "The Molecular Wavefunction Approach to the Description of Ion-Atom Charge Transfer Collisions," Dec. 5, Argonne National Lab.
- J.G. Fossum (2113), "Computer-Aided Numerical Analysis of Silicon Solar Cells"; C.E. Land and W.D. Smith (both 5113), "PLZT Ceramic Numeric Display Devices," 1974 IEEE International Electron Devices Meeting, Dec. 9-11, Washington, D.C.
- N.R. Armstrong, N.E. Vanderborgh (both UNM), and R.K. Quinn (5154), "A Differential Technique for Treatment of Spectroelectrochemical Data to Yield Mechanistic Information," S.W. regional meeting, ACS, Dec. 9-11, Houston, Texas.
- W.B. Boyer (5243), J.L. Krone, R.F. Davis (both 2643), and J.E. Powell (5243), "Computer Data Acquisition System for the Sandia Four-Beam Laser," Scintillation and Semiconductor Counter Symposium, Dec. 11-13, Washington, D.C.

Locomotive vs Snow

If you're sentimental about railroads and steam engines, you have a chance the weekend of Feb. 1-2 to see a noble sight: the steam-powered rotary snow plow of the Cumbres & Toltec Railroad as it tackles snow drifts in the Cumbres Pass region north of Chama. For you youngsters, a rotary is a sort of giant fan-like contrivance on the front of the engine that chews its way through the snow, throwing it in a magnificent plume to one side of the track. In the old days rotaries were the only way to keep the line clear in mountainous areas, and even they bogged down occasionally.

On both Saturday and Sunday the train will leave Chama at 10 a.m. For 30 bucks you can ride the train, dinner included, but you may also follow the progress of the train along Route 17 — providing it's open. Assuming it is open, be sure to take chains and other winter-driving gear. You'll probably be asked to make a donation to help preserve the old narrow gauge railroad, which is in financial straits. The drive from Albuquerque to Chama takes about three hours.



MAGMA ENERGY Research Advisory Panel met at Sandia recently to evaluate progress of the Sandia program. From left are John Colp (5710A), Harry Hardee (1543), Glen Brandvold (5710), Dallas Peck (U.S. Geological Survey), George Kolstand (AEC Div. of Physical Research) and Mark Davis (5830). Other panel members are Melvin Friedman, Texas A&M; Pete Ward, USGS; Bob Decker, Dartmouth; Roger Staehle, Ohio State; John Hermance, Phillips Petroleum; and Bill Brigham, Stanford.