

THE ATOM

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THE ATOM

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Editor: Kenneth J. Johnson

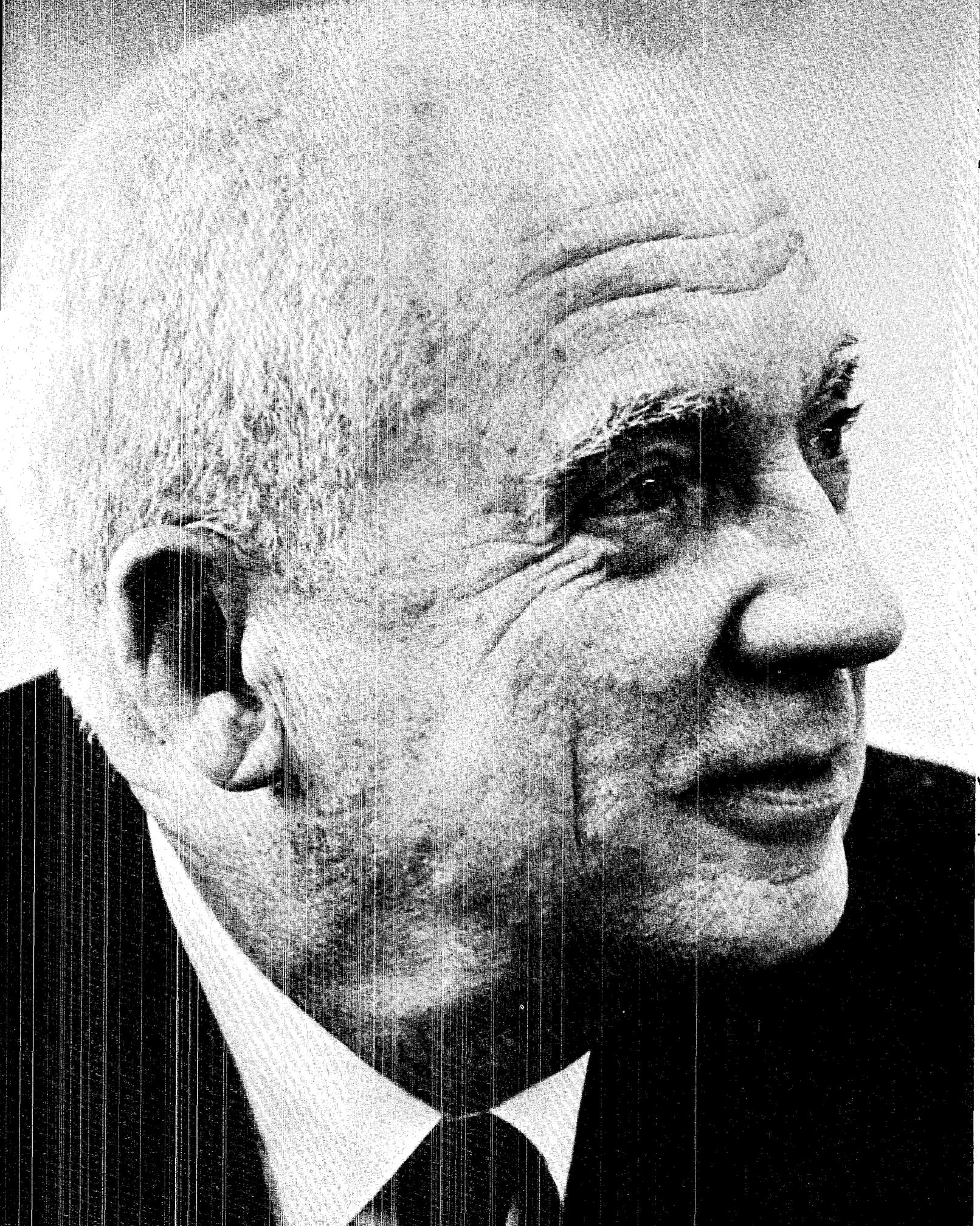
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COVER:

A winter storm prevails as a Los Alamos school bus travels the winding road between snow-shrouded trees in Los Alamos Canyon. The photograph was taken by PUB-1 Photographer Bill Jack Rodgers.



Laboratory Director Norris E. Bradbury To Resign

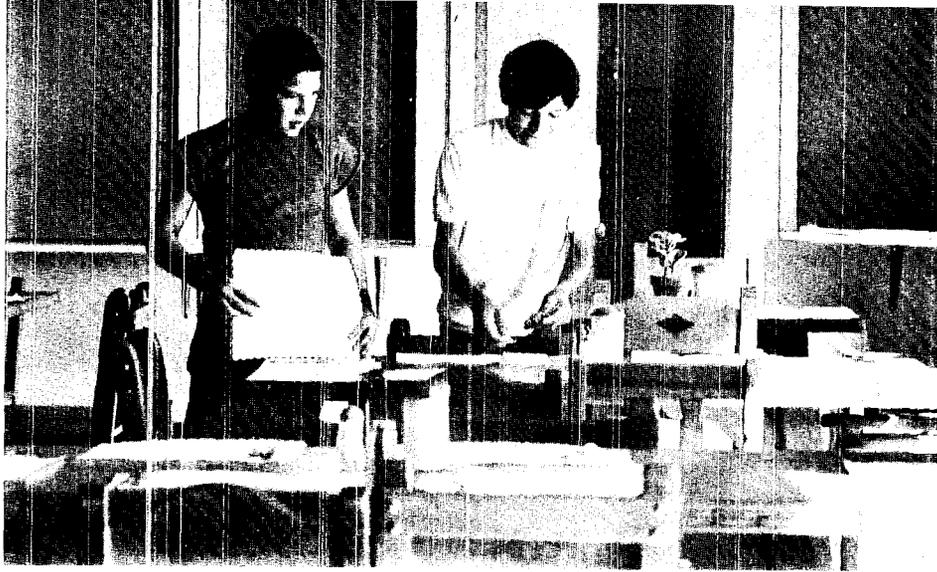
Norris E. Bradbury, director of the Los Alamos Scientific Laboratory has announced his intention to resign "not later than October, 1970."

This date will mark a quarter century for Bradbury as director. He is the second director LASL has had since it was established in 1943. He succeeded the late J. Robert Oppenheimer in mid-October, 1945.

Today, Bradbury directs a laboratory with more than 4,200 employees, a capital investment of more than \$260 million, and an annual operating budget of over \$100 million.

His successor will be named by the University of California which operates the Laboratory for the Atomic Energy Commission.

University President Charles Hitch said, "We are all aware of Dr. Bradbury's outstanding service to the University and to the nation as director at Los Alamos, and the quality of the Laboratory and its many accomplishments are directly attributable to his dynamic leadership." ❀



The Will

Freddie, 14, and Ray, 16, set the tables in the Rancho del Rio dining hall.



Decorating a Christmas tree at the Jemez House for boys are Philip, 12, Dennis, 17, and Cris, 11.

Boys at Jemez House Be Home Christmas

By Barbara Storms

Home for Christmas. This happy tradition will be assured some 15 boys living at Jemez House, a Los Alamos-supported ranch for boys near Alcalde in the Espanola Valley. For many of them it will be the first time they have been able to count on receiving the warmth, love and even the presents that most people take for granted as part of the holiday season.

Boys come to the rambling adobe ranch from a wide variety of unhappy situations. They come from homes where they are not or cannot be properly cared for; from foster homes that did not work out; from temporarily unsettled homes; from homes with emotionally unstable atmospheres; and occasionally from juvenile court. Some come because they have asked to, others because they are sent. Some stay over a weekend, some for a few months or a year, some indefinitely. They range in age from six to seventeen.

But whatever their background or length of stay, the boys find at Jemez House what they need most: plenty of food, a warm, comfortable bed and people who care a great deal. And for this reason most of the boys will stay at the ranch for a festive Christmas celebration rather than to experience uncertain circumstances at the homes of family, relatives or strangers.

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Kenny, 13, left, tries his hand at Christmas tree decorating. At right is Pete, 11, and below, Danial, 17.

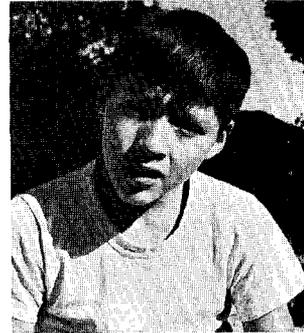


photo by John Young

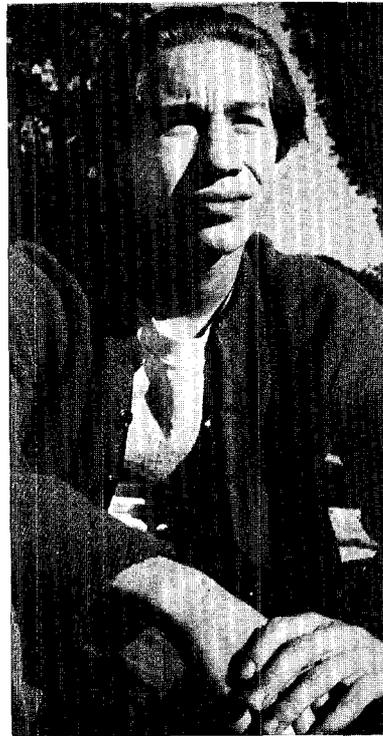


photo by John Young



Like all boys, those at the Jemez House can't let a good tree go unclimbed.

The idea for Jemez House originated with the Rev. Peter W. F. Adgie of the United Church who felt there was a need in Los Alamos for a charitable institution through which the community could express its concern for people.

"Most other communities support a rest home, a home for children or for the aged, or a charity hospital but in Los Alamos there is nothing," Adgie said. "People must go elsewhere to serve or be served in any of these places. Los Alamos needed a place with which it could identify."

Adgie collected a group of like-minded Los Alamos people who decided that the town's greatest need at the time was a home for boys. "There are children leaving Los Alamos all the time for similar places far from home," Adgie pointed out.

In Nov., 1967, the group, consisting of Adgie, Mr. and Mrs. Robert Waterman, Mrs. Bobby Craig, Miss Alice Loughridge, Robert Emigh, Louis Bunch, and Ivan Kressin, organized as a non-profit, non-denominational corporation. Today the board is composed of Adgie as chairman, Kressin as vice chairman; Emigh, treasurer; Mrs. Craig, secretary; Albert Dylre, executive director; and members: Waterman, Charles Holley, Edwin Hyatt, James Miller, Sherman Rabideau, Frederick Toca, Dr. Howard Wadstrom, John J. Wallwork, and Eugene Zukas.

The corporation originally hoped to find a location in Los Alamos that would comfortably house twelve boys. "It was almost providential," Adgie said, "that just about the time we decided a Los Alamos location was hopeless and that we'd need space for many more than twelve boys, we learned that the existing boys ranch at Embudo, south of Taos, was about to close for lack of funds."

In August, 1968, Jemez House, Inc. rented the ranch property and took over administration of the Embudo home. But it quickly became clear that the ranch would not be suitable. The buildings were badly



photo by Gene Pollard

Acting Manager Paul Smarella offers adult companionship to the boys. Here, Stevie, 8, is intrigued with Smarella's watch.

in need of expensive repairs, the bridge across the Rio Grande providing access to the ranch was in precarious condition, and there was no room for expansion.

By March, 1969, the Jemez House board had acquired Rancho del Rio, at times a working ranch, a restaurant and motel, and an art gallery, along with about 12 acres of land, a lease with option to buy 70 more acres, and an \$80,000 mortgage. In July the boys and staff of Jemez House moved to the new location.

At last count there were 15 boys, four dogs, two cats, and a descended skunk living in the sprawling old ranch house under the supervision of Acting Manager Paul Smarella, House Parents Mike and Tess Feddes, a full-time cook, and a housekeeper and laundry supervisor who works five days a week.

Smarella came to Jemez House in August just after his discharge from the Army where he spent two years as a social worker. He holds a degree in anthropology and psychology and has spent several years as

a Boy Scout summer camp project director and as an assistant scout master in both England and the United States.

Mr. and Mrs. Feddes, former case workers for the State Department of Health and Social Services, joined the project "because they were impressed with our hopes and dreams," Adgie said. The Feddeses live at the ranch, help with supervision and share their home with the boys providing them with a family atmosphere.

Most urgently needed staff addition at the moment is an additional set of house parents, Adgie said, and a number of applicants are being considered. House parents for Jemez House, according to Adgie, need no special training, not even a diploma. "They just need to love boys." He estimates, it takes one set of house parents for every 15 boys.

Jemez House's new quarters currently provide sleeping space for 30 boys with room for expansion, well-equipped kitchen, dining room and laundry facilities and a number of rooms for living, studying and recreation, most of which still need considerable repair, refurbishment and furnishings. There is plenty of room for outdoor recreation plus a very dilapidated swimming pool which may some day be made usable.

"Eventually," Adgie said, "we hope to be able to accommodate 50 boys with an adequate staff, a good strong tutoring program, a good recreation program and a cultural program closely tied to Los Alamos."

The boys are sent to elementary school in Alcalde and to junior high and high school in Espanola but most of them have a tough time of it. Lacking parental interest and guidance, the boys have had little incentive to learn and, as a result, most of them are as much as four years behind in their reading abilities, Adgie explained. To help alleviate the problem, Espanola teachers have organized a once-a-week tutoring program and an-

other is being arranged by Los Alamos residents.

"We want to give these boys the opportunity to learn to the extent of their abilities and to have at least the opportunity to consider college or to get adequate training for jobs," Adgie said.

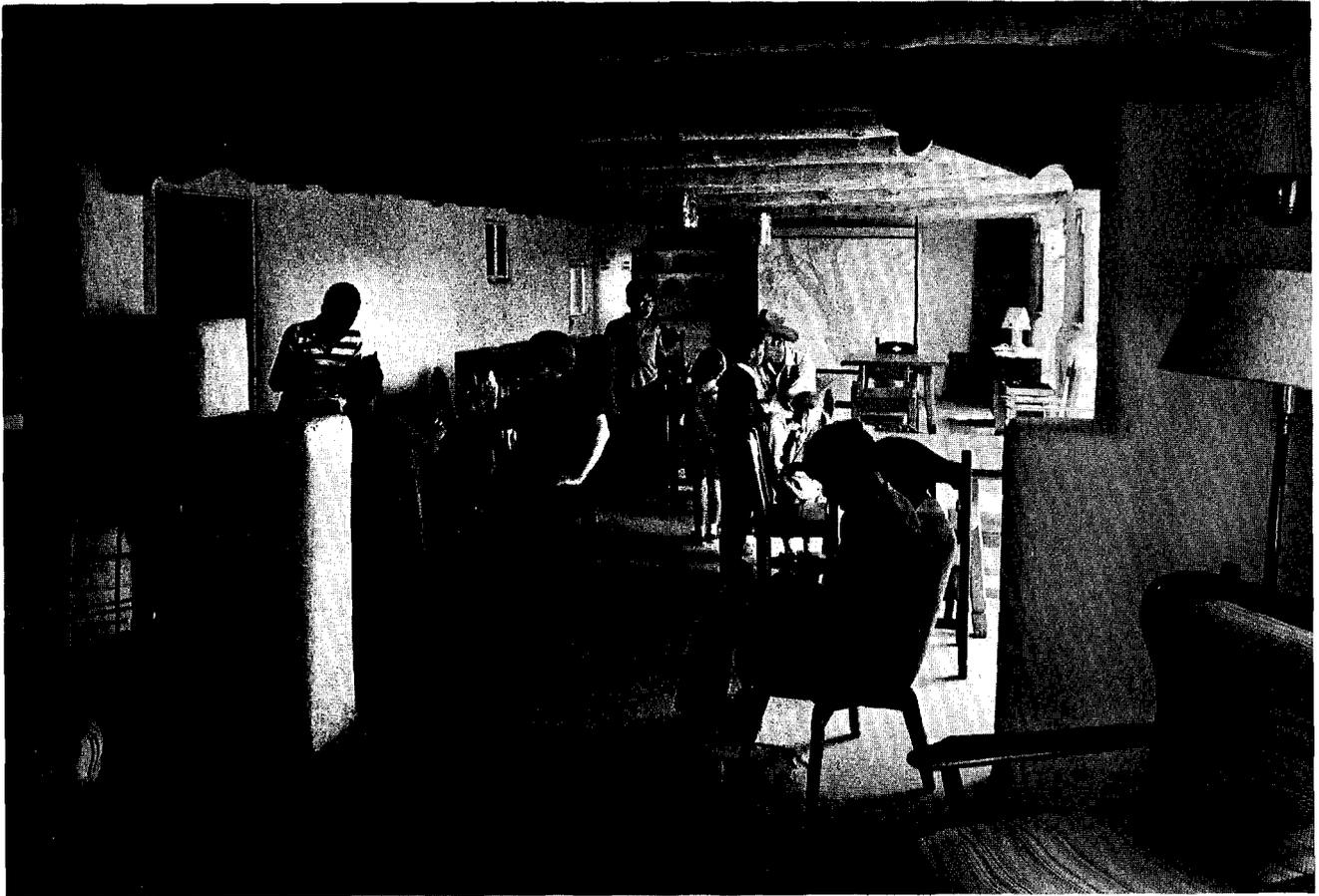
A unique feature of Jemez House is its close connection with Los Alamos in cultural and recreational activities. The boys are invited to all activities of the Los Alamos school system and attend concerts, plays, rodeos, and circuses, thanks to the generosity of Los Alamos organizations. The boys learn sports from volunteer instructors and in games arranged with teams from Los Alamos.

In addition, Jemez House boys have standing invitations at some Los Alamos homes and often visit during special events and spend weekends taking part in family activities.

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Six of the 16 boys at Jemez House and three of their four dogs take a walk on a gravel road at Rancho del Rio.



The ranch depends often on Los Alamos people, not only for entertaining boys in their homes but for contributions of equipment, labor, instruction and ideas, Adgie said.

The biggest problem the directors encounter in developing the Jemez House programs is money.

"It is not that we are trying to make life plush for these boys," Adgie said, "it is just that there is so much they need and so little that can be provided without money."

As an example, Adgie said, they want to offer the boys both the skills and opportunity to do some of the maintenance work around the ranch. "There are always volunteers from Los Alamos to do the teaching," he pointed out, "but if we can't buy the paint or the lumber or the tools, it simply can't be done."

Adgie estimates that it costs about \$200 to keep one boy at Jemez House for a month. The Welfare Department pays half the cost for

the boys it sends to the ranch. Families of boys who come without welfare referral are asked to pay what they can, if they can. The home depends on an additional \$2,000 per month in donations to operate Jemez House at its present size and condition without improvements or expansions, such as development of adjoining land for agriculture and animal husbandry training.

"We hope in the 70's to be able to serve all the boys who are eligible whom we must now turn away because of our financial situation," Adgie said. "We want to serve any boy who wants to come or whose situation makes it desirable."

Adgie is convinced that Jemez House is a worthwhile long-range investment. "We believe that if we are able to keep a boy at Jemez House until he is ready to leave, we won't have him on the tax rolls for the next 30 or 40 years as a welfare recipient or convict."

Between meals the boys at Jemez House use the dining hall for other activities.

He pointed out that it costs more to keep one man in the penitentiary for a year than to keep a boy at Jemez House for seven or eight years.

And many a boy, Adgie feels, is faced with just that sort of alternative.

In New Mexico there are hundreds of boys out roaming the streets, getting into trouble and heading straight for prison because nobody cares. "And the important point," Adgie emphasized, "is not that they are out roaming the streets but that nobody *cares* that they are. At Jemez House we offer them a place where they know they are wanted and cared about. We believe that if we can make a boy feel that people care about him, then he will grow up to care about people." ❄

250

Receive Service Pins

A total of 250 Los Alamos Scientific Laboratory employees were scheduled to receive service pins, honoring their years of service to the University of California, at ceremonies conducted last month. Of these, 12 persons became members of the 25-year club. Twenty-year service pins went to 89 persons; 15-year pins were received by 60; and 10-year pins were awarded to 89.

25 Years

Leon Brown, J-12
Mary Ford, CMF-DO
Edward F. Hanmel, Jr. CMF-9
Jesse L. Jones, SD-1
Wright H. Langham, H-4
Donald P. MacMillan, N-1
Espiridion Montoya, SD-5
Rene J. Prestwood, J-11
Eugene S. Robinson, CMF-4
Robert G. Sturgess, CMB-7
Martin P. Warren P-9
Edward F. Wortmann, SP-11

20 Years

John W. Anderson, CMB-11
Jesse Aragon, GMX-3
Larned B. Asprey, CMF-4
William L. Baird, J-12
James J. Banta, ENG-7
George H. Best, K-1
Wendell A. Biggers, J-12
Joseph B. Bourne, Jr., GMX-3
Thomas J. Boyd, Jr., MP-2
William L. Briscoe, P-1
John E. Brolley, P-DOR
Frank J. Brush, Jr., W-7
John F. Buchen, CMB-7
George P. Bucy, GMX-3
Blendin L. Burton, GMX-4
Rudolph L. Campbell, SP-3
Ignacio S. Chavez, GMX-3
Filmore F. Criss, N-1
Fred E. Doremire, W-3
John E. Dougherty, W-3
Arthur J. Dube, G-1
Frank J. Dunn, W-1
Frank I. Farrar, ENG-4
George C. Fitzgibbon, CMF-2

Herbert B. Fletcher, GMX-3
George P. Ford, J-11
William E. Fox, SD-3
Kurt E. Freygang, SP-11
Earl W. Fullman, J-16
Avery M. Gage, N-2
Bailon Gallegos, SP-4
Louis A. Geoffrion, K-2
Alfredo J. Gonzales, GMX-3
Anthony J. Greco, Jr., GMX-3
Vida B. Grissom, SP-4
Edward B. Grothus, GMX-4
Lester S. Hackenberry, J-8
Gale S. Hanks, CMB-6
Charles E. Holley, Jr., CMF-2
James T. Hume, P-1
Herbert M. Hutcheson, SP-4
Edwin C. Hyatt, H-5
Edwin L. Kemp, Jr., P-16
Jere D. Knight, J-11
Kathryne B. Lewis, PER-1
Filiberto Lovato, SP-12
Walter E. McCracken, ENG-2
Charles V. McGoff, ADP-SF
Phil S. Marrs, GMX-3
Bernie Q. Martinez, AO-4
Juan P. Martinez, GMX-3
Roberto E. Martinez, GMX-3
George M. Matlack, CMB-1
Antonio J. Montoya, GMX-3
Donald M. Mosher, GMX-3
Harold W. NaVeaux, SD-5
Juan Olivas, GMX-3
Robert K. Osborne, W-4
Roy Owen, ENG-4
James D. Perrings, H-4
Sherman W. Rabideau, CMF-2
Leslie M. Redman, D-6
Lillie Rico, GMX-7
J. L. Robinson, GMX-3
Lawrence M. Rohrer, SD-4
Robert K. Rohwer, GMX-2
Ruth C. Romero, SP-DO
Edgar B. Rynd, W-1
Luis G. Sanchez, SD-1

Aldred E. Schofield, P-14
David R. Smith, N-2
Louis G. Smith, GMX-2
Maynard E. Smith, CMB-1
Milo M. Smith, SD-5
Hulen Stallings, SP-4
William H. Stewart, GMX-3
Ellery Storm, H-1
Arthur N. Strein, GMX-3
Mark H. Tattan, CMB-7
Marvin C. Tinkle, CMB-8
Robert D. Tyson, SD-5
Simon J. Vigil, GMX-3
Victor Vigil, CMB-6
Robert F. Warner, K-4
Joseph L. Weber, ADP-SF
Eva L. M. Wentworth, CMB-7
Wiley S. Williams, SP-DO/NTS
Vernon L. Zeigner, N-3
Eugene G. Zukas, CMF-13

15 Years

Voncille M. Armijo, J-11
Floyd B. Baker, W-9
Richard O. Branch, C-1
Emmett L. Brazier, ENG-1
Wilmetta E. Brown, GMX-8
Lillian L. Chavez, D-4
Elizabeth V. Coca, CMB-DO
Donald R. F. Cochran, MP-6
William C. Davis, GMX-8
Dana E. Elliott, GMX-1
Laurene F. England, SP-3
Lillian M. Fox, P-1
William A. Fox, CMB-7
William J. Frankoski, J-7
Thomas N. K. Godfrey, T-2
Elmer L. Grady, SD-5
Lonnie D. Gray, GMX-8
Emma M. Henderson, T-5
Robert L. Henning, ENG-2
Jasper A. Jackson, Jr., P-DOR
Andrew M. Koonce, J-8
Wilbur A. Korte, SD-5
Herald W. Kruse, J-14
Norman A. Kuehn, SD-5
Charles E. Landahl, N-1
Clarence E. Lee, T-4
Edith H. Lilly, H-4
Jerry H. Longley, T-4
Merced M. Lopez, W-3
Alvin R. Lyle, P-2
Maurice E. Manes, W-1
Mercedes Martinez, SP-4
Roman Martinez, H-4
John B. Miller, GMX-2
Kenneth B. Mitchell, J-10
Baudino J. Montoya, GMX-9
Richard H. Moore, CMB-7
Roy A. Olson, P-4
Leopoldo Ortiz, H-4
Donald G. Ott, H-4
Frederick R. Parker, GMX-10
Lorraine G. Parten, PER-5
Frances O. Peters, W-4
Robert W. Peterson, J-16
John B. Ramsey, GMX-8
James G. Reavis, CMB-11
Clyde H. Reed, N-2
Nora C. Rodgers, W-4
Mollie G. Rodriguez, J-DO
Robert G. Schrandt, T-8
Gretchen R. Schuch, D-2
Luween E. Smith, SD-2
Morton C. Smith, CMF-13
Eleanor B. Standing, D-2

Theodore Suina, W-1
R. Dean Taylor, CMF-9
Orville G. Winslow, GMX-8
Walter P. Wolff, J-8
W. Jack Worlton, C-DO
William H. Yeamans, SD-1

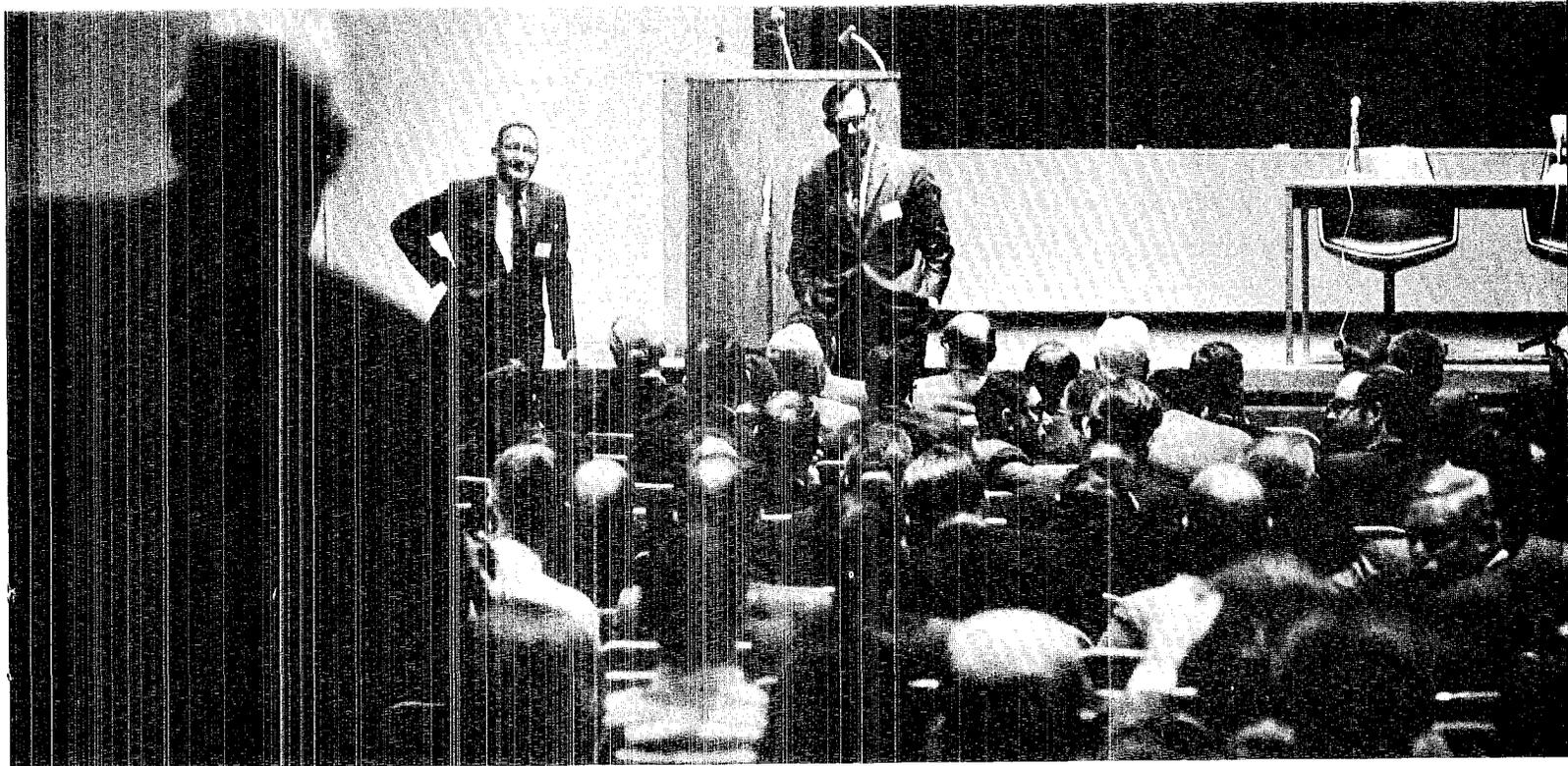
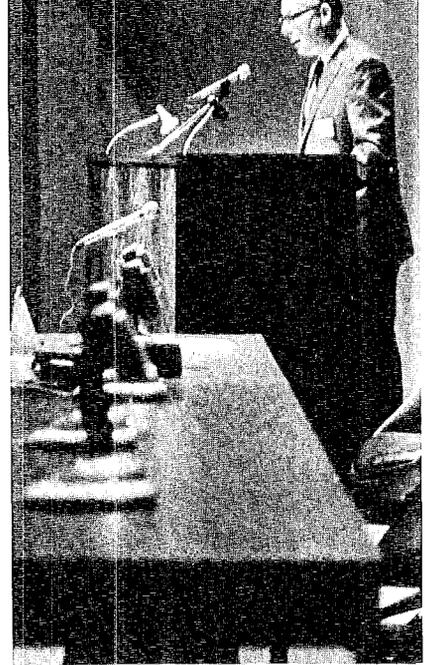
10 Years

Anthony A. Amsden, T-3
Marie D. Apodaca, N-7
John R. Asbridge, P-4
Clarence U. Benton, J-16
William A. Beyer, T-8
Donald W. Brown, N-7
Edward A. Brown, N-4
Eddie R. Claiborne, ENG-1
Andrew P. Conley, MP-1
James R. Conn, GMX-7
Kenneth C. Cooper, N-3
Lilly V. Cordova, SP-11
Fred L. Cornwell, C-7
Kenneth R. Crandall, MP-4
Carl L. Cuntz, Jr., PUB-2
Bert R. Dennis, ENG-6
Lois A. Dildine, D-2
Kenneth H. Duerre, K-5
Alphon E. Ellison, SD-1
Rolf Engleman, GMX-2
Jerome J. Erpenbeck, GMX-10
Charles I. Fairchild, CMB-6
Jack C. Fuller, W-7
Terry R. Gibbs, GMX-7
Bennie J. Gillespie, W-3
Alfred L. Gonzales, CMB-11
Margaret A. Gore, T-DO
James J. Hayden, ENG-6
David H. Herrera, SD-1
Lester A. Hoak, N-3
John L. Horney, CMB-7
Marjorie A. Johnson, D-2
Elwood P. Jordan, CMB-7
Gloria M. Jordan, H-DO
Leo M. Kelly, MP-3
Richard M. Kernodle, J-15/NTS
Clifton T. Kerns, GMX-3
James D. Kershner, T-6
Monnie L. Kirkpatrick, D-8
Francine O. Lawrence, J-11
Walter B. Lea, SD-5
Joseph E. Lopez, GMX-3
Clydelle Lowry, GMX-3
Carolina M. Lujan, N-3
Jesse J. Lytten, SD-1
Phillip N. Mace, J-8
Leston W. Miller, J-16

Don R. Morrow, SD-DO
William L. Mudd, W-4
Marvin M. Mueller, W-7
Richard O. Niethammer, W-1
Pearl L. Norwood, P-10
Leah L. Peterson, T-5
Robert E. Pruner, CMF-4
Carol A. Pyburn, ENG-4
Jane K. Rasmussen, C-7
Dwight H. Ray, GMX-11
Lois L. Rayburn, K-DO
James H. Reid, SP-3
Neva J. Roberson, PER-6
Richard H. Rochester, GMX-7
Bill J. Rodgers, PUB-1
Theodore Romanik, CMB-7
Dorothy E. Rothe, W-1
Frederick P. Schilling, K-5
Thomas P. Seitz, P-9
Herbert P. Sena, SD-1
William H. Showers, D-4
James W. Snyder, SD-4
James W. Stapp, GMX-7
John N. Stewart, Jr., J-15
William D. Stoms, CMB-7
J. Robert Streetman, N-2
Carolyn J. Syska, GMX-1
William M. Taylor, T-2
Daniel J. Torres, C-8
Donald L. Upham, GMX-2
Fidel Valdez, H-4
Homer H. Wade, N-1
Glenn E. Waggoner, SD-5
Lyle A. Wahman, N-1
Arthur W. Walker, C-2
Cliff V. Weaver, N-5
Neil W. Weeks, H-7
Edward F. Wingert, SD-2
Kurt Wolfsberg, J-11
Hairston G. Worstell, MP-3
Don A. York, MP-5
Emma Lou Young, T-3



Symposium on Nuclear Safeguards



Top, A. E. Schubert, vice president of General Electric's Nuclear Energy Division and chairman of the Atomic Industrial Forum Committee on Nuclear Materials Management, talks on "Safeguards Activities Within Industry." Above, Delmar L. Crowson, director of the AEC's Office of Safeguards and Materials Management, and R. P. Wischow, head of the Division of Safeguards in the AEC's Regulatory Branch, field a question from E. D. Marshall, AEC, Oak Ridge. Left, Wolfgang Stoll, manager of ALKEM, Postfach, Germany, presents a question from the floor.

story and photos continued on next page



Left, during a break in symposium activities D. Gupta, Gesellschaft fur Kernforschung, Postfach, Germany, and Curt Heidenrieck, EURATOM representative in Washington, D.C., strike up a conversation. At right are Ken Gablin, Mechanics Research, and Leonard M. Brenner of the Office of Safeguards and Materials Management. Below, equipment exhibits and N-6 laboratories are toured at Ten Site.



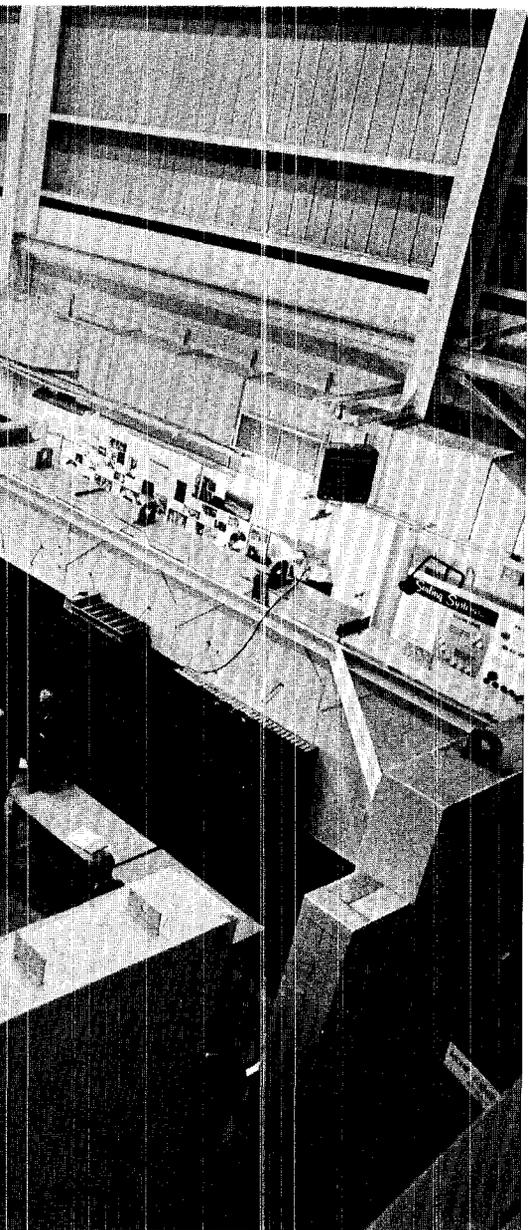
More than 400 persons, representing agencies that work with nuclear materials attended the recent AEC Symposium on Nuclear Safeguards at the Los Alamos Scientific Laboratory.

Purpose of the symposium was to review and disseminate information and to exhibit safeguard equipment, according to Delmar Crowson, director of the Office of Safeguards and Materials Management for the AEC, who attended the event.

Safeguards are measures to prevent and detect unlawful diversion of nuclear materials. Increasing industrial usage of nuclear materials in domestic and international activities has led to more emphasis on safeguards. In only two years, safeguards have progressed from the conceptual stage to a point where a field of technology is being developed and some new equipment is ready for use. The largest nuclear safeguards research and development program in the United States is being carried on at the Los Alamos Scientific Laboratory by Group N-6 under the leadership of G. Robert Keepin.

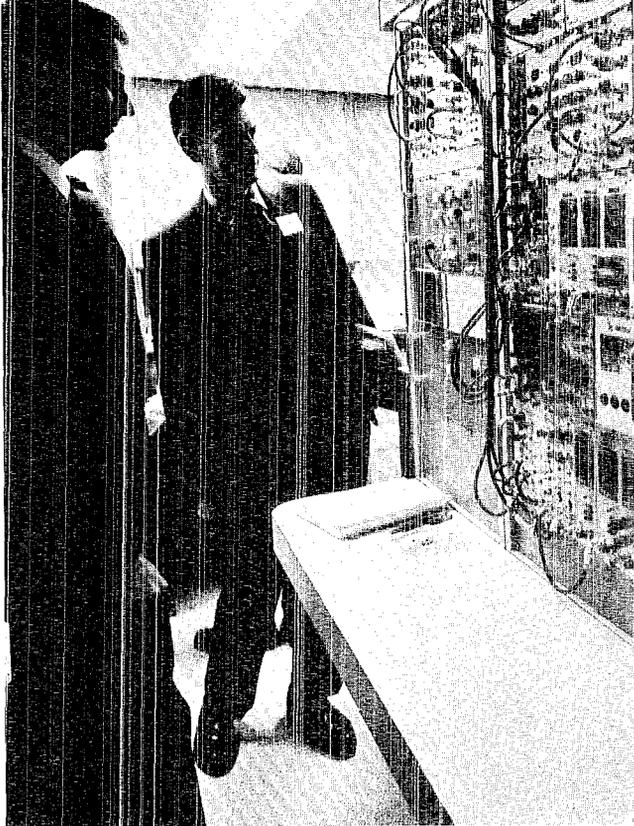
During the three-day program there were several invited presentations, panel discussions, equipment demonstrations, and tours of the Safeguards Research Laboratories at Ten Site and Pajarito Site where new techniques are being developed for the nondestructive, rapid and accurate assay of nuclear materials under a wide range of laboratory and field conditions.





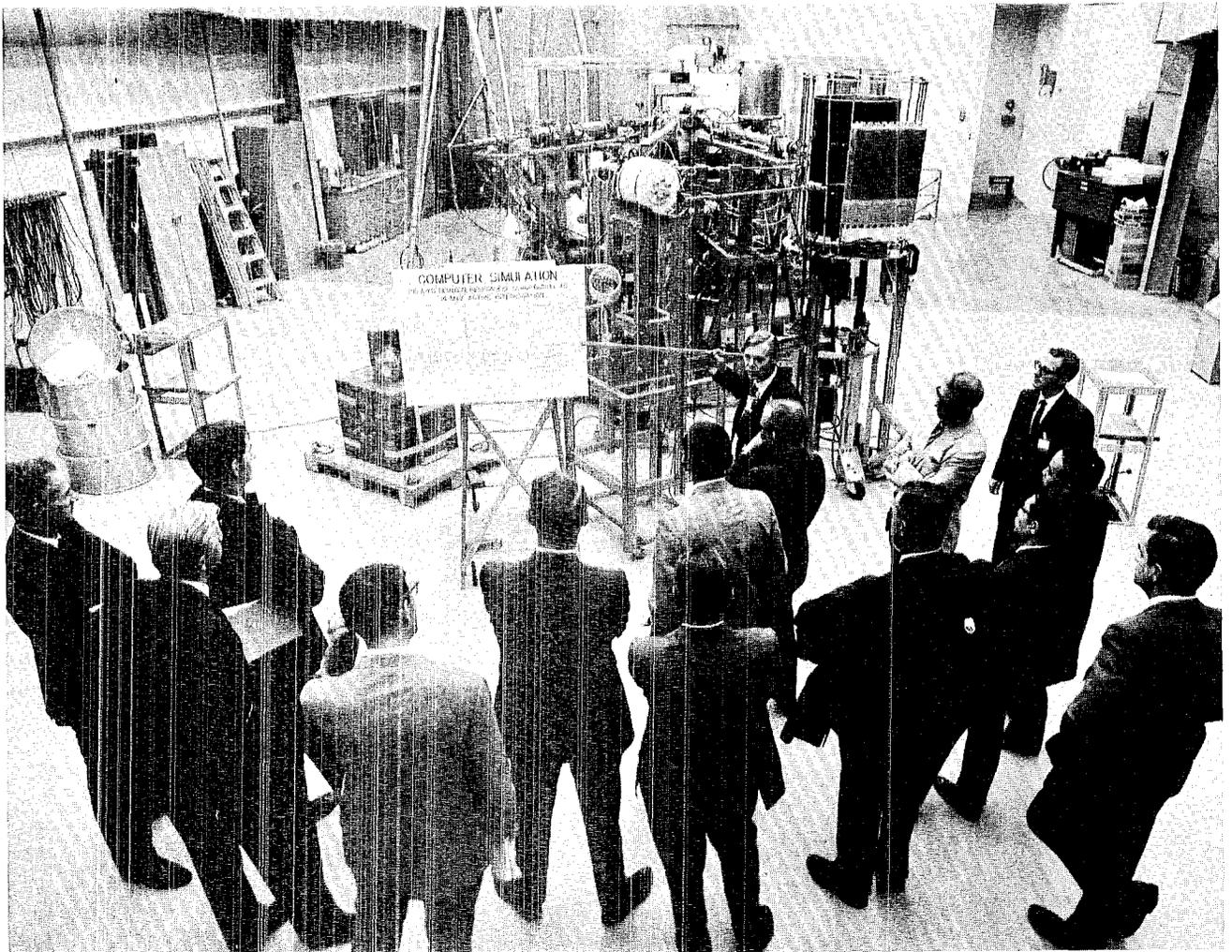
Above, Gary Worth and Ronald Augustson, both of N-6, explain nuclear safeguards equipment to AEC Commissioner Clarence E. Larson and William C. Bartels, chief, Technical Studies Branch of the Office of Safeguards and Materials Management. Below are G. Robert Keepin, N-6 group leader, Clement J. Rodden, AEC, New Brunswick Laboratory, and LASL Director Norris E. Bradbury. (photos continued on next page)





Larry East, N-6, explains the mobile assay safeguards laboratory control panel to Paul Hurley, Analytical Procedures, Inc.

Munson Thorpe, N-6, explains neutron interrogation techniques, using a Cockcroft-Walton, at the nuclear safeguards laboratories at Pajarito Site.



Weapons Division's Liaison Group, W-9

Nearly two years ago a new group was added to Weapons division and tucked away at the bottom of Los Alamos Canyon, but not to be forgotten. Its name, as well as those of its members, has since become well known among the technical groups at the Los Alamos Scientific Laboratory and in the top echelon offices of the national nuclear weapons establishment.

The group is W-9, located on the second floor of a building it shares with W-1, just inside the gate of TA-41 (W-Site). Its work area consists of six nondescript offices and a conference room it shares with W-1 and W-7.

Its primary job is to effect an exchange of information on nuclear weapon matters between the various technical weapons groups within the Laboratory and agencies of the Atomic Energy Commission and the Department of Defense.

The group is led by LeRoy Horpedahl who has been a member of W division since 1951. He was with W-1 until the new group was formed by Harold Agnew, W division leader, in January of 1968.

As originally conceived, W-9 is small, consisting of a permanent staff of eight members whose efforts are supplemented by personnel on loan from other groups at the Laboratory.

That there would be "on-loan" personnel among its members was included in the planning for the

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On the go, W-9 Group Leader LeRoy Horpedahl and Cecil Carnes walk toward their cars in the TA-41 parking lot.



Current "on loan" personnel to W-9 are Bruce Barnaby, with earphones, formerly of ENG-7; Floyd Baker, CMF-2, left; and Delmar Bergen, W-8.



formation of W-9. As planned, members of other groups at LASL would be encouraged to apply for assignment to W-9 for a year or two and then return to their former groups. This concept is still current.

"We prefer to have a person on loan to us for a couple of years," Horpedahl said, "because it takes him a while to become oriented. But, it's important to have people rotate within the Laboratory.

"People on loan bring new ideas and disciplines into the group, and, in turn, the group's activities broaden their perspective of the weapons program," Horpedahl said. "Disciplines as far as our group is concerned are chemistry, physics, electronics, mechanical engineering, and statistics."

Floyd Baker of CMF-2, Bruce Barnaby of ENG-7, and Del Bergen of W-8, are currently on loan to W-9. The permanent staff, in addition to Horpedahl, is made up of seven technically-trained and experienced men, the majority of which have been at LASL for more than ten years. They are Herman Deinken who prior to joining the group was a member of W-3; Ed Dudziak, formerly of GMX-3; Bob Gattis, a retired Air Force colonel; Cecil Carnes, from D-6; Bert Heil, from W-1; and Bill Bennett, a member of GMX-7 in the early 1950's who recently returned to LASL after working for the Stanford Research Institute. Marge Staake, who has been a member of Weapons division for more than nine years, is the group's secretary.

Members of the staff, in the performance of their liaison duties, are required to travel considerably. "They're trips of short duration," Horpedahl said. "Our visits are seldom more than two and a half days on any given venture. A lot of them are for only a day. Personnel from other groups accompany us to provide technical support."

Much of the group's liaison duties concern the first two of seven phases which encompass the AEC-DOD functions for nuclear weapon development, production and stock-

pling. These two phases fall under the heading of "Concept Formulation." This is an orderly approach for compiling the information normally considered in a decision to proceed with development.

Phase One has to do with the formulation of ideas for new weapons and components either separately or between AEC laboratories and the DOD. During this phase there is a continual exchange of information between individuals, groups, and the AEC and DOD.

Horpedahl said the DOD keeps the AEC laboratories informed of

its requirements for weapons and, in turn, the laboratories keep the DOD informed of the status of weapons development. "This gives us a feel, as a laboratory, for what we ought to be working on by priorities. If a concept comes out that looks reasonable, the Department of Defense Research and Engineering requests a Phase Two study through the Military Liaison Committee to the Department of Military Application in Washington. The DMA submits a request for participation of AEC laboratories. W-9 then picks up the ball

and coordinates the operation here."

If an idea still looks promising after a Phase One study, it enters Phase Two. In this study the feasibility and desirability of undertaking the development of a new weapon or component is determined; military characteristics are established for it; and responsibilities of the AEC and DOD for the various tasks involved in development and procurement are determined. "Phase Two," Horpedahl said, "terminates in a formal document to determine these things.

continued on next page



Burt Heil, W-9, works with John Lucas, SD-2 senior designer, in a drafting room at TA-41.



At a W-9 briefing, Horpedahl explains the intricacies of a weapon to John Anderson, CMB-11 associate group leader; Glenn Waterbury, CMB-1 assistant group leader; Richard Baker, CMB division leader; and James M. Taub, CMB-6 group leader.

"Simultaneously an impact and capability study is conducted wherein we price out each nuclear weapon proposal. The two studies are submitted to the DOD for their disposition and they decide whether to drop it or go into Phase Three with it."

"We don't build anything," Horpedahl said. "We talk to a lot of people and then look to other technical groups to support us. We set up conferences and meetings and call in the experts on particular problems."

For these events and for often-held briefings its members conduct, W-9 prepares the necessary visual aids. It also assists the Director's office in preparing the weapons program budget for LASL and has taken on responsibility for preparing the quarterly reports on "Weapons Research and Development."

The latter has been prepared by AEC-Contractor Samuel Glasstone for the past several years. Glasstone, however, recently moved to Oak Ridge, Tenn., and, as a result, the job was delegated to W-9. "We feel quite honored to be asked to do it," Horpedahl said.

The importance of W-9 functions with respect to Weapons division was pointed out by Agnew: "Having these individuals with their primary mission as liaison establishes rapport with the defense community outside the Laboratory. They make contacts and find out what the customer (DOD) needs rather than to wait for a one-shot meeting once a year. Eventually the group will have an important role in providing better utilization of our resources in the Laboratory toward implementing requirements placed on us by the AEC and DOD." ❀

short subjects

Los Alamos Family Days are set for June 27-28, 1970. In addition to opening many of the Laboratory areas as in the past, Zia Company and the Atomic Energy Commission will participate. Heading the Family Days Committee is **Robert Y. Porton**, PUB-2, group leader.



Those planning to cut their own Christmas trees can get permits during the weekends of Dec. 13-14 and Dec. 20-21 in addition to the regular working hours of the Los Alamos Branch of the U.S. Forest Service.

Trees can be cut from Camp May Road to State Road 4. The cost is \$1 for trees up to eight feet, \$1.25, eight feet to 12 feet, and \$1.50, 12 to 16 feet.

The Forest Service office is located in the basement of the AEC building.



Fay Huttenlocher, hematology clerk and receptionist for H-2, died Oct. 25 of injuries received in an automobile accident. Services were held at Block's Memorial Chapel. Interment was in the National Cemetery at Santa Fe. She is survived by her husband, William.



Josephine Gilligan, a secretary in J division, retired Aug. 8 after 19 years with the Laboratory. She has been employed by J division during the entire period. She and her husband, Byron, CMB-6, will continue to make their home in Los Alamos.



Louis Rosen, MP division leader, has been named to the Editorial Advisory Board for "Particle Accelerators," a new journal for those involved in the design, construction and operation of accelerators.

The journal, which is to be published in Great Britain, is to have international circulation. Its contents will include papers on accelerator theory and experiments, new ideas, and related fields.

L. D. P. King has accepted an appointment as research advisor in the Director's office.

Prior to the appointment, King was chairman of the Laboratory's Office for Rover Flight Safety, which has been eliminated. King, however, will continue to represent LASL on any matters involving Rover Flight Safety in the future.



Edward F. Skibbe, former industrial tool maker for SD-1, died Oct. 13 in Bradenton, Fla. Skibbe retired from Laboratory service in Jan., 1961, after more than 15 years with the Shop department.



In connection with the 25th anniversary of the discovery of americium and curium, observed at the 13th Robert A. Welch Foundation Conference in Houston, Texas, recently, **Robert Penneman**, CMF-4 alternate group leader, noted that "CMF-4 has put into the world's literature most of the chemistry of americium and curium."

A written account, "The Radiochemistry of Americium/Curium" by Penneman and **Thomas Keenan**, also of CMF-4, was translated into Russian and the commercial process for americium production is based on CMF-4 work.

Americium and curium are radioactive elements. One of the discoverers of both is **Glenn T. Seaborg**, chairman of the Atomic Energy Commission, who was a keynote speaker at the conference.

Penneman was a discussion leader. **George Cowan**, J-11, spoke on "Heavy Element Synthesis by Prompt Neutron Capture," and **James Waber**, a LASL consultant and former staff member, discussed calculations made by him and others at the Laboratory concerning the quantum chemistry of the actinides.



Two Los Alamos Scientific Laboratory employees are named inventors and another a co-inventor on patents recently released for public use by the Atomic Energy Commission.

The patents include: "Detection, Identification and Analysis of Fissionable Isotopes" by **G. R. Keepin**, N-6 group leader; "Heat Actuated Control Rod Utilizing a Cadmium-Potassium Mixture" by **G. F. Erickson**, N-5.

A co-inventor of the "High Speed Temperature Monitor" is **R. W. Leep**, N-1.



More than 250 Boy Scouts from the Texas Panhandle toured the Science Museum and Exhibit Hall, the Physics building, and the Meson Physics Facility as guests of the Los Alamos Office of the Atomic Energy Commission and the Los Alamos Scientific Laboratory. They arrived at the Laboratory after a seminar in Amarillo, which was held for the purpose of qualifying the Scouts for the Atomic Energy Merit Badge. Above, Bob Brashear, PUB-2, explains the workings of the Meson Facility to the Scouts who are grouped in the beam channel. At left is the first of three tanks that will make up the drift-tube portion of the LAMPF accelerator.

new hires

Accounting department

Michael L. Pierotti, Los Alamos, AO-5

C division

Morris M. Klein, New York, C-6

CMB division

Gary Simonsic, Bessemer, Pa., CMB-6

Gary D. Carter, Espanola, CMB-6

D division

Madge T. Keepin, Los Alamos, D-2 (casual)

Alison K. Kerr, Los Alamos, D-2 (casual)

Lois F. Petersen, Los Alamos, D-2 (casual)

H division

Espiridion Torres, Golden, Colo., H-1

Leighton S. Cram, Emporia, Kansas, H-4 (postdoctoral)

K division

William W. Kessinger, Rathdrum, Idaho, K-4

MP division

Rene S. Mills, Los Alamos, MP-2 (part-time)

Julian Sandoval, Estancia, MP-5 (part-time)

Fred Hornstra, Jr., Argonne, Ill., MP-6

Joseph L. Uher, Upton, N.Y., MP-6

Mail and Records

Humberto F. Martinez, Santa Fe

N division

T. Douglas Reilly, Livingston, N.J., N-6

P division

Frank A. Duran, Emoryville, Calif., P-15

Richard W. Peterson, East Lansing, Mich., P-15 (postdoctoral)

Personnel department

Mary A. Caine, Los Alamos, PER-1

Ruby M. Bone, Los Alamos, PER-4 (casual—rehire)

Jose R. Cordova, Espanola, PER-4

Public Relations department

Helen J. Starling, Los Alamos, PUB-2 (casual)

the technical side

Presentation at Third International Conference on High Energy Physics and Nuclear Structure, Columbia University, N.Y., Sept. 8-12:

"High Resolution Pion and Proton Spectroscopy at LAMPF" by H. A. Thiessen, MP-4 (invited)

Presentation at 11th Annual Safety Seminar of the Armed Services Explosives Safety Board, Memphis, Tenn., Sept 9-10:

"Safety Problems with Abandoned Explosive Facilities" by W. C. Courtright, H-3

Presentation at Inorganic Chemistry Seminar, University of Illinois, Champaign, Sept. 16:

"Mechanism of the Photochemical Isomerization of Platinum (II) Complexes" by S. H. Mastin, CMF-4 (invited)

Presentation at American Chemical Society Meeting, Albuquerque, Sept. 19:

"LAMPF—Los Alamos Meson Physics Facility—Status and Uses" by D. R. F. Cochran, MP-6

Presentation at Symposium on Metallurgical Testing for Product Reliability, sponsored by the Metals Engineering Institute of the American Society for Metals, Cleveland, Ohio, Sept. 22-23:

"Nondestructive Testing" by G. H. Tenney, Dir. Off.

Presentation at Symposium on Physics and Nondestructive Testing, Chicago, Ill., Sept. 23-25:

"Neutron Interrogation Techniques in Fissionable Material Assay" by G. R. Keepin, N-6 (invited)

Presentation at Symposium on Stored Program Controllers, Sandia Laboratories, Albuquerque, Sept. 23-25:

"The Data Acquisition System for the Scyllac Device" by R. F. Grib-

ble, J. W. Lillberg, G. A. Sawyer, D. M. Weldon, all P-15 and D. Brown, P-1

Presentation at Fourth Annual Inter-society Energy Conversion Engineering Conference, Washington, D.C., Sept. 23-25:

"Space Power Supplies Based on ZrH_x-Moderated Thermionic Reactors" by R. C. Anderson, T. G. Frank, and E. W. Salmi, N-5

Presentation at IEEE Workshop on Advanced Methods and Hardware Implications, Lake Arrowhead, Calif. Sept. 24-26:

"Simulation of Axisymmetric, High Beta Plasma" by R. L. Morse, P-18

Presentation at Meeting of the Colorado Radiological Society, Denver, Sept. 26:

"Biomedical Applications of Negative Pions" by W. H. Langham, H-4 (invited)

Presentation at Fall Meeting of the Greater Rio Grande Chapter of the ACM, Las Cruces, Sept. 26:

"ILLIAC IV" by L. E. Rudsinski, C-4

Presentation at Meeting of Reactor Safety Conference, San Juan, Puerto Rico, Sept. 29-30:

"On-Line Computer System for the UHTREX Reactor" by J. Bergstein, K-4, H. B. Demuth and F. P. Schilling, both K-5

Presentation at the International Symposium on Closed Confinement System, Dubna, USSR, Sept. 29-Oct. 3:

"High-Beta Toroidal Confinement" by F. L. Ribe, P-15 (invited)

Presentation at Weapons Technology Colloquium, Sandia Laboratories, Albuquerque, Sept. 30:

"Physics of Initiation" by E. A. Bernard, W-4 (invited)

Presentation at Radiation Shielding Information Center Seminar on Two-Dimensional Discrete Ordinates Calculations, Oak Ridge, Tenn., Sept. 30:

"Discrete Ordinates Applications in Nuclear Weapons Vulnerability and Effects Calculations at Los Alamos" by H. A. Sandmeier, T-DOT (invited)

Presentation at 13th Conference on Analytical Chemistry in Nuclear Technology, Gatlinburg, Tenn., Sept. 30-Oct. 2:

"X-Ray Spectrometric Determination of Rhodium and Palladium in Uranium-Base 'Fissium' Alloys" by E. A. Hakkila, R. G. Hurley, and G. R. Waterbury, all CMB-1

"The Determination of Oxygen to Metal Atom Ratios in Sintered Oxides" by J. W. Dahlby, G. R. Waterbury, and C. F. Metz, all CMB-1

"X-Ray Fluorescence Spectrometric Determination of Plutonium and Zirconium in Uranium Base Alloys" by R. G. Hurley, E. A. Hakkila and G. R. Waterbury, all CMB-1

Presentation at the Fall Uranium Alloys Meeting, Sandia Laboratories, Albuquerque, Sept. 30-Oct. 2:

"The Fabrication of Uranium Alloy Pressure Vessels by Direct Extrusion, Back Extrusion, and Electron Beam Welding," by D. J. Sandstrom, CMB-6

"Rolling and Fabrication of Uranium Alloys" by R. W. Keil, CMB-6

"Mechanical Testing of Welded, Pre-Cracked Stress Corrosion Specimens" by C. A. Javorsky and T. I. Jones, both CMB-6

"Surface Protection and Corrosion Studies for Uranium and Uranium Alloys" by J. K. Gore, R. Seegmiller, and A. G. Fox, all CMB-6

Presentations at Fusion Objectives Lectures at Dounreay Experimental Reactor Establishment, Thurso Caithness, Scotland, Sept. 30; University of Aberdeen, Scotland, Oct. 2; and

continued on next page

at Trinity College, Dublin, Ireland, Oct. 5:

"Fusion Objectives" by J. L. Tuck, P-DO

Presentation at special seminar, City of Hope National Medical Center, Duarte, Calif., Oct. 1:

"Histones, Their Structures, and Postulated Functions" by G. R. Shepherd, H-4 (invited)

Presentation at seminar, Biophysics Department of the University of California, Los Angeles, Oct. 1:

"DNA Distribution in Cell Populations by Means of Microfluorometry" by M. A. Van Dilla, H-4 (invited)

Presentation at Radiation Shielding Information Center, ORNL Seminar-Workshop on Multigroup Cross Section Preparation, Oak Ridge, Tenn., Oct. 1-3:

"The Cross Section Processing Code Used in LASL's Transport Codes" by H. A. Sandmeier, T-DOT

"Comparison of Several Versions of the MC² Code" by M. E. Battat, R. J. Seamon and R. J. La Bauve, all K-1

Presentation at Seminar, Division of Biology, California Institute of Technology, Pasadena, Oct. 2:

"Phosphorus in Histones" by G. R. Shepherd, H-4 (invited)

Presentation at Pacific Conference on Chemistry and Spectroscopy, Anaheim, Calif., Oct. 5-10:

"Computer Calculations in Spectrochemical Analysis" by J. R. Phillips, J. F. Murphy, and C. J. Martell, all CMB-1

Presentation at the 42nd Annual Conference, of the Water Pollution Control Federation, Dallas, Texas, Oct. 5-10::

"Chemical Treatment and Cement Fixation of Radioactive Wastes" by C. W. Christenson and L. A. Emelty, both H-7

Presentation at 20th Congress of the International Astronautical Federation, Advanced Propulsion Systems

Session, Mar del Plata, Argentina, Oct. 5-12:

"Status of the Nuclear Rocket Propulsion Program" by K. Boyer, J-DO (invited)

Presentation at the Semi-Annual AEC Computer Information Meeting, Idaho Falls, Idaho, Oct. 6-7:

"Los Alamos Scientific Laboratory Computer Activity Report" by T. L. Jordan, C-DO

Presentation at Ninth Thermal Conductivity Conference, Iowa State University, Ames, Oct. 6-8:

Graphite From 100° to 3000° K" by B. H. Morrison, N-1

Presentation at Colloquium, Physics Department, University of Denver, Oct. 8:

"Shock Tube Studies of Molecular Vibrational Energy Transfer" by W. D. Breshears, GMX-7 (invited)

Presentation at Case-Western Reserve University, Cleveland, Ohio, Oct. 9:

"Creep Theory for Graphite Containing Microcracks" by J. Weertman, CMF-13

Presentation at Lecture at Chemistry Department, New Mexico State University, Las Cruces, Oct. 9:

"Radioisotope Research at Reactors" by H. A. O'Brien, Jr., K-2

Presentation at Mid-Tennessee Section of the American Society for Nondestructive Testing, Tullahoma, Tenn., Oct. 9:

"Nondestructive Testing and the Materials Explosion" by G. H. Tenney, Dir. Off. (invited)

Presentation at Joint Meeting of the Rio Grand Chapter, Health Physics Society, 15th Bio-Assay and Analytical Chemistry Conference, and Rocky Mountain Section of the American Industrial Hygiene Association, Los Alamos, Oct. 9-10:

"Comparison of Filter Media Against Liquid and Solid Test Aerosols" by R. G. Stafford and H. J. Ettinger, both H-5

"Neutron Measurement Using Thermoluminescent Dosimeters" by M. J. Engelke, H-1

"External Measurement of Plutonium Lung Burdens" by P. N. Dean, W. H. Langham, both H-4, and H. M. Ide, H-5

Presentation at Meeting of the New Mexico Branch of the American Society for Microbiology, Las Cruces, Oct. 11:

"DNA Synthesis in Ultraviolet-Light Irradiated Resistant and Sensitive Mutants of Hemophilus Influenzae" by G. J. Kantor, H-4

"Nanomolar Amino Acid Analysis" by C. N. Roberts and G. R. Shepherd, both H-4

Presentation at 16th Meeting of the Refractory Composites Working Group, Seattle, Wash., Oct. 12-15:

"Effect of Graphite Type and Particle Size on the Mechanical, Physical, and Thermal-Stress Properties of Hot Pressed Carbide Graphite Composites" by R. E. Riley, CMB-6 (invited)

"Production and Properties of Isotropic and Highly Anisotropic Polycrystalline Graphites" by M. C. Smith, CMF-13

Presentation at Symposium on Radiation Safety Problems in the Design and Operation of "Hot" Facilities, Saclay, France, Oct. 13-17:

"Operating Experience on an Economical Plutonium-238 Processing Facility" by M. W. Shupe, L. J. Mullins, A. N. Morgan, A. L. Gonzales, A. E. Ogard, and J. A. Leary, all CMB-11 and A. M. Valentine, H-1

Presentation at 24th Calorimetry Conference, Portsmouth, N. H., Oct. 14-16:

"Enthalpy of Formation of Uranium Sesquicarbide" by E. J. Huber and C. E. Holley, both CMF-2 and W. G. Witteman, CMB-3

"Low Temperature Heat Capacity of PuC_{0.87} and Problems Associated with its Determination" by T. A. Sandenaw and R. B. Gibney, both CMF-13, and R. N. R. Mulford, CMF-5

Presentation at meeting of the Society for Experimental Stress Analysis, Houston, Texas, Oct. 14-17:

"Thermal Fatigue Tests of Rocket Nozzle Coolant Tubes" by J. W. Neudecker and C. R. King, both N-7

"Moire-Fringe Techniques at Extremely High Temperatures" by J. W. Neudecker, R. G. Lawton, both N-7, and S. D. Stoddard, CMB-6

Presentation at meeting of The Metallurgical Society of the American Institute of Mechanical and Metallurgical Engineers on Mechanisms of Hot Working, Philadelphia, Pa., Oct. 14:

"Some Strain-Rate Effects in Aluminum at High Temperatures" by J. E. Hockett, CMF-13

Presentation at meeting of the American Ceramic Society, Seattle, Wash., Oct. 15-18:

"Alpha Particle Irradiation Damage in ThO₂" by D. L. Douglass, and S. E. Bronisz, both CMF-5

"Isotropic Graphites Made From Santa Maria Coke" by M. C. Smith, CMF-13

Presentation at meeting of the Health Physics Society, Los Alamos, Oct. 16:

"PHERMEX—The Facility and Its Uses" by D. H. Janney, GMX-11

Presentation at Seminar, Biology Department, Battell Northwest, Richland, Wash., Oct. 16:

"Radiation Effects on Tissue Culture Cells" by R. A. Walters, H-4 (invited)

Presentation at Materials Science Seminar, University of Kentucky, Lexington, Oct. 17:

"The Response of Metals to Compressive Deformation" by J. E. Hockett, CMF-13 (invited)

Presentation at Research Institute of National Defense, Stockholm, Sweden, Oct. 20:

"Cross Section Measurements Using a Nuclear Explosion Neutron Source" by B. C. Diven, P-3

Presentation at seminar, Department of Physics, University of Wisconsin, Madison, Oct. 20:

"Variational Approach to Vlasov Plasmas" by H. R. Lewis, P-18

Presentation at Institute of Electrical and Electronics Engineers Thermionic Specialist Conversion Conference, Carmel, Calif., Oct. 21-24:

"Development of Pressure Bonded Sheathed Insulators" by C. V. Weaver and W. A. Ranken, both N-5

"Stress Analysis of Pressure Bonded Tri-Layers During Fabrication" by R. G. Lawton, N-7

"The Dynamics of the Hydride Thermionic Reactor" by C. E. Backus, N-5

"Techniques for Determining the Postirradiation Disposition of ⁸⁵Kr Produced in Mo-UO₂ Cermet Fuels" by M. C. Chaney and A. J. Patrick, both N-5

"Results of the Irradiation of Y₂O₃, Al 995, and Lucalox Insulator Specimens in the Omega West Reactor" by C. V. Weaver, W. H. Reichelt, A. J. Patrick and W. A. Ranken, all N-5

"Development and Feasibility Tests of Isothermal Irradiator" by C. V. Weaver, A. J. Patrick, and W. A. Ranken, all N-5

Presentation at Thermionic Conference, Monterey, Calif., Oct. 23-24:

"Fission Gas Escape from Mo-UO₂ Fuel" by W. H. Reichelt, M. C. Chaney, A. J. Patrick and W. A. Ranken, all N-5

Presentation at Sixth Transducer Workshop, NASA Langley Research Center, Langley AFB, Va., Oct. 23-24:

"Vibration Measurements at Cryogenic Temperatures and High Acceleration Levels" by B. W. Washburn, J-18

Presentation at Annual Conference of the Instrument Society of America, Houston, Texas, Oct. 27-28:

"Young's Modulus Measurements to 2500°C by the Thin Rod Resonance Technique" by C. R. Saunders and J. W. Neudecker, both N-7

Presentation at the National Safety Congress, Chicago, Ill., Oct. 28:

"Respirators—Selection and Training" by E. C. Hyatt, H-5 (invited)

Presentation at AEC/DOD Graphite Technology Interchange, Sandia Corporation, Albuquerque, Oct. 28-29:

"Santa Maria Coke and Isotropic Graphites Made From It" by M. C. Smith, CMF-13

"Thermal Fracture Tests for Graphites and Graphite-Metal Carbide Composites" by J. C. Rowley, N-7

"Preparation and Properties of Highly Anisotropic Polycrystalline Graphites" by R. J. Imprescia, CMF-13 (invited)

"Effect of Graphite Type and Particle Size on the Mechanical, Physical, and Thermal-Stress Properties of Carbide Graphite Composites" by R. E. Riley, CMB-6 (invited)

Presentation at the 22nd Gaseous Electronics Conference, American Physical Society, Gatlinburg, Tenn., Oct. 28-31:

"Emission from Metastable States in a Nitrogen Ion Beam" by W. B. Maier II, and R. F. Holland, both J-10

Presentation at International Electron Devices Meeting, Washington, D. C., Oct. 29-31:

"High Power Klystron Design and Analysis" by P. J. Tallerico, MP-2

Presentation at American Vacuum Society National Symposium, Seattle, Wash., Oct. 29-31:

"Monte Carlo Simulation of Specular and Surface Diffusional Perturbations to Flow from Knudsen Cells." by J. W. Ward, CMF-5, R. L. Bivins, C-7, and M. V. Fraser, C-4

Presentation at colloquium, Mathematics Department, University of New Mexico, Oct. 30:

"The Numerical Solution of Singular Perturbation Problems for Ordinary Differential Equations" by F. W. Dorr, C-6

20

HOME FOR THE HOLIDAYS.....



years ago in los alamos

Culled from the Dec., 1949, files of the Santa Fe New Mexican by Robert Porton

Los Alamos Deserted Over Holidays

Hundreds of Los Alamos residents were missing over the Christmas holidays, visiting relatives and friends in former home towns that included every state in the Union. Estimates indicate over one-third of the Atomic City's population had left the Hill. Spokesmen for the three major employers here, the AEC, the University of California and the Zia Company, said large groups of employees had planned their annual vacations at this time. Meanwhile, those remaining got together Friday afternoon to break the office routine and stage impromptu parties.

Mesa Public Library Will Have New Quarters

Mesa Public Library will move into larger quarters as soon as shelves and equipment arrive. The Library will take over rooms formerly used by Central Cafeteria. The interior of the building has been reworked. Many more books will be added when the Library opens in its new location.

Waste Disposal Research Will Save \$1,000,000

The Atomic Energy Commission will save about \$1,000,000 annually through improved processes in the handling of radioactive wastes, according to a report issued here yesterday. The report cites an extensive research program currently supported by the Commission to improve waste handling and storage methods. Recent improvements in processing wastes from chemical separation plants have reduced by 20 percent the volume of liquid wastes which must be stored. It is anticipated that the amount will be reduced by 50 percent in the near future, resulting in the million dollar saving.

KRSN Goes Commercial

Radio station KRSN has increased its power to 250 watts and the former government-owned station now makes use of a conventional transmission tower. Broadcasting up to now has been done over the electrical distribution system in Los Alamos. The station has been taken over by the Rio Grande Broadcasting Company which operates three other outlets in New Mexico. Program Director Bill Spack announced that, in addition to full local coverage, KRSN will offer a series of the top American Broadcasting Company shows—and commercials!

what's doing

PUBLIC SWIMMING: High School Pool—Monday through Thursday, 7:30 to 9 p.m.; Saturday and Sunday, 1 to 6 p.m.; Adult Swim Club, Sunday, 7 to 9 p.m. (Effective through Dec. 18. Pool then closed until January.)

NEWCOMERS CLUB: Annual Christmas Dinner-Dance, Dec. 6 at Elks Lodge. Cocktails-7 p.m., dinner-7:30 p.m., dance-9 p.m. to 1 a.m. For information call Mrs. Anita Schamaun, 672-9365.

SIERRA CLUB: Luncheon meeting at noon, first Tuesday of each month, South Mesa Cafeteria. For information call Brant Calkin, 455-2468, Santa Fe.

LOS ALAMOS GEOLOGICAL SOCIETY: Earth Treasure Show, Recreation Hall, Dec. 6, 10 a.m. to 9 p.m. Open to the public. Exhibits in mineral fossils, lapidary, jewelry, artifacts; Demonstrations—cabochon making, faceting, silver work, gem tumbling, horizontal lapping. Dealers will be present. Door prizes each hour.

MESA PUBLIC LIBRARY:

Dec. 1 through 21—1969 New Mexico Fiesta-Biennial paintings from Museum of New Mexico

Dec. 8 through 31—District Nine Nurses' Association display

Dec. 22 through Jan. 12—Paintings by Mary Stovall

OUTDOOR ASSOCIATION: No charge, open to the public. Contact leader for information regarding specific hikes.

Dec. 4—Meeting, 224 Chamisa—8-4488

Dec. 7—Double Game Pits, Dorothy Hoard—672-3356

RIO GRANDE RIVER RUNNERS: Meetings scheduled for noon, second Tuesday of each month at South Mesa Cafeteria. For information call Cecil Carnes, 672-3593.

LOS ALAMOS ARTS COUNCIL—Dec. 21, 7:30 p.m., Lodge; Laurie Calkin presents program of choreographed Christmas carols.

CHORAL SOCIETY—Rehearsals now in progress each Tuesday, 7:30 p.m., Lodge. Winter concert—"Carmina Birana," Carl Orff; Spring concert—"Bach's 'St. Matthew's Passion.'" For further information call John Ward, 8-4554.

LOS ALAMOS LIGHT OPERA: Cole Porter's musical comedy, "Can-Can", Dec. 5, 6, 12, and 13. Admission \$2, \$3, \$4. Tickets on sale at Chamber of Commerce during regular office hours, Civic Auditorium, 7 to 9 p.m. weekdays, or by mail—Box 353, Los Alamos, 87544.

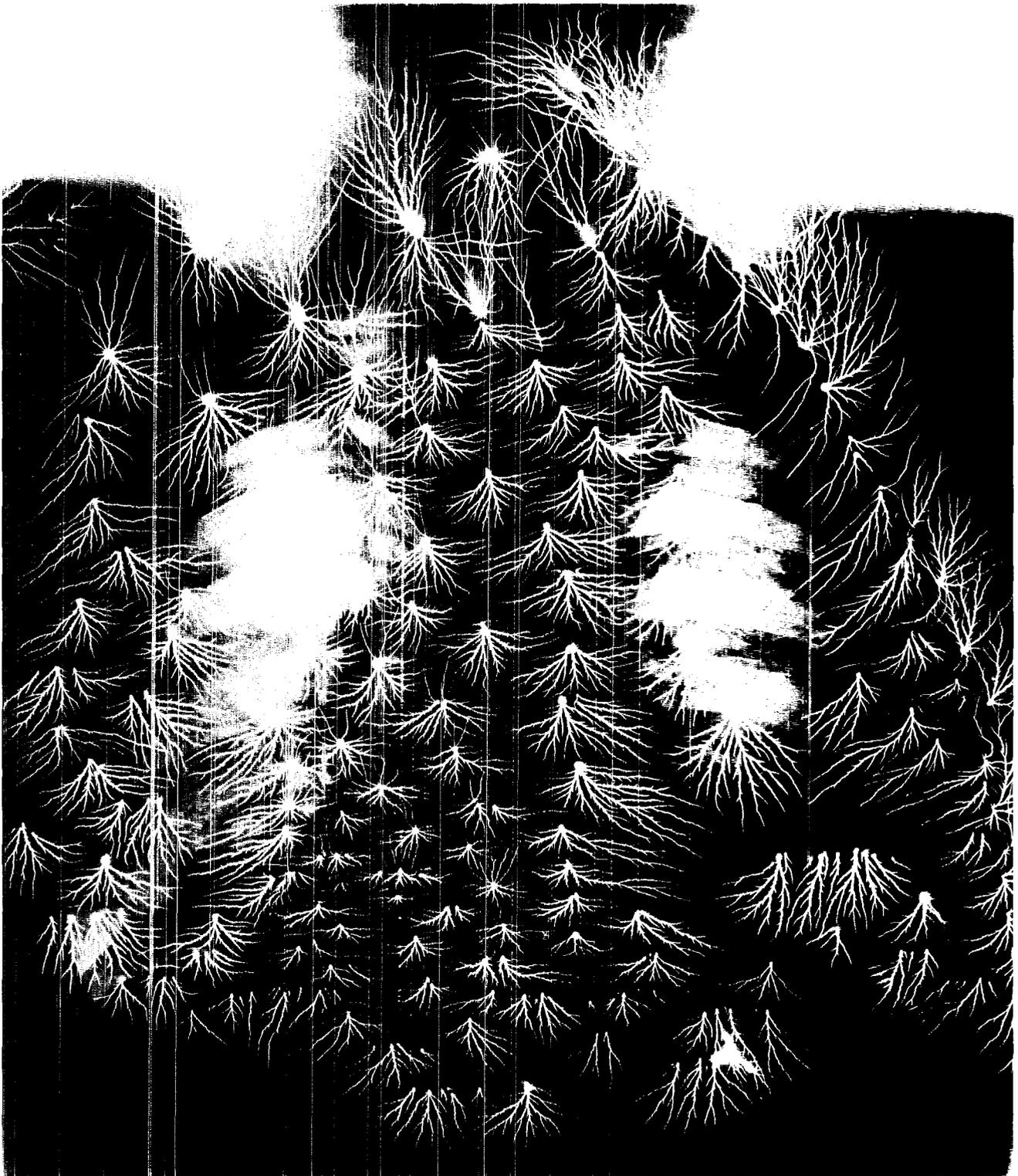
MOUNTAIN MIXER SQUARE DANCE CLUB: All dances begin at 8 p.m. at Canyon School. For information contact Mrs. Alice Wynn, 2-5964.

Dec. 6—Regular Dance, Bones Craig

Dec. 20—Christmas cookie sampling, Bones Craig

Dec. 31—New Year's Eve, Bill Wright of Farmington

LOS ALAMOS SKI CLUB: Ski sale and exchange from 7 to 9 p.m. Dec. 4 at the Recreation Hall.



If your chest x-ray looks like this one, don't be alarmed. The x-ray was taken of a Laboratory employee by H-2 as a part of the employee's regular physical examination. But an electrostatic discharge sometime before the film was developed patterned the negative with this interesting design.

Henry T. Motz
3187 Woodland
Los Alamos, New Mexico

87544



While their brethren jetted across early evening skies over New Mexico, America's Apollo 12 astronauts were on the moon. This photograph was taken from the roof of the Administration building by Bill Regan, PUB-1 group leader.