

Nuclear Division News



A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

Vol. 7, No. 24/November 25, 1976

inside . . .



The Nuclear Division's Color Television Center, with studio and control room facilities located at Y-12, is now in full operation. Shown above is Mike Shepherd, in charge of videotape production; story is on page 3.

Other features:

- Gailar new EEO coordinator. page 2
- Spider aids in research page 5
- Christmas party ticket applications page 6, 7
- Dr. Lincoln page 7

Y-12ers take 'Herman' to Sewanee for recovery of radioactive source

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For the second time in 15 months, the Nuclear Division's mobile robot and its two-man operational team have performed a difficult task involving the recovery of radioactive materials.

The robot, nicknamed "Herman," is directed by William Pankratz and Robert Frazier of the Y-12 Plant's Electrical and Electronic Maintenance Department. Their latest accomplishment was the recovery of a 14.5 curie source of cesium-137 at the University of the South in Sewanee, Tenn. The cylindrical source, about one-fourth inch in diameter by one and one-fourth inch in length, apparently became detached from an irradiation unit in an experimental facility at the university sometime November 8.

The Oak Ridge field office of ERDA was notified by the Tennessee State Health Department November 10 that assistance in recovering the source would be required. The robot, along with Pankratz and Frazier, were sent to the university to provide assistance. Max Scott of Y-12's Health Physics Department also was dispatched to the scene to provide assistance and consultation on the operation.

The recovery operation consisted of moving the robot through the door of the irradiation room, finding the source via the robot's television camera "eyes," picking up the source and



Scott



The Y-12 mobile manipulator, left, and its auxiliary equipment include a remote control arm assembly, a transformer pack and control console. The equipment is transported by the trailer at rear which is equipped with a workroom-laboratory.

After recovering the source, the team returned it to Oak Ridge where it will be examined at ORNL, placing it inside a shielded container and removing the 350-pound container from the room. The robot was maneuvered through all these motions by Pankratz at the controls in another room. The operation required about two hours.

Scott said the source had indicated a radiation reading of about two roentgens per hour at the doorway of the experimental room and a reading of about 70 to 80 roentgens per hour within a foot of the source. Some three persons associated with the university reportedly had been exposed to the source several days before.

The recovery operation was the second such task for the robot, Pankratz and Frazier within a 15-month period. In August, 1975, the team recovered a 1,500-curie source of cobalt-60 from an experimental facility at the University of Rochester. The source had been stuck in an irradiation device there for about two and one-half years before it was recovered.

The robot system, built to Nuclear Division design specifications by a commercial vendor in 1966, consists of the robot mobile manipulator, its control console and a workroom-laboratory, all of which are housed and transported in a trailer van. It is designed so that it can operate at distances up to 700 feet from the con-



Y-12 employees Robert Frazier, left, and William Pankratz, operators of the robot—or mobile manipulator—successfully retrieved a radioactive cesium source from an irradiation facility at the University of the South, Sewanee, Tenn.

trol console to which it is attached by a cable. The manipulator is about five feet long, six feet tall and about two and one-half feet wide. It has a mechanical hand capable of lifting 160 pounds and can drag up to about

(Please turn to page 8)

Excludable sick pay no longer allowed as income deduction, according to IRS

Employees who have or who will receive wage or salary payments during 1976 while away from work due to an illness or disability, should note that the 1976 Tax Reform Act has revoked the federal income tax treatment for such wages or salaries. The revocation is effective with the 1976 taxable year.

Formerly, such wages or salaries could be treated as excludable sick pay income for federal income tax purposes. Now, all such wages or salaries must be treated as regular income.

Since this change is retroactive to January 1, 1976, the company will not prepare excludable sick pay statements for employees this year.

All sick pay or disability pay which is paid to active hourly or salaried employees, however, will continue to be exempt for federal Social Security tax.

Employees who are affected by this provision of the 1976 Tax Reform Act should take this change into consideration when calculating and filing their 1976 federal income tax return.

Joanne Gailar appointed new EEO coordinator for Division

Joanne Gailar has been appointed Equal Employment Opportunities (EEO) Coordinator for the Nuclear Division. She succeeds Charles A. Blake, who recently was appointed manager of Equal Employment Opportunity Programs for the Corporation.

Gailar, who has served as Affirmative Action Coordinator at ORNL since February, 1974, will assume duties of her new position on December 1.

As EEO Coordinator, she will be responsible for assisting Nuclear Division management in developing, implementing, monitoring and reporting on affirmative action programs. Each of the four installations has an affirmative action coordinator who will work with her in carrying out Division-wide affirmative action goals.

A native of New Orleans, Gailar has a degree in English from the University of Tennessee. She also completed all course work necessary for a major in psychology and a minor in sociology at Newcomb College.

Gailar joined the ORNL staff in 1965, working in civil defense research except for a one-year assignment as an editor in the ORNL-NSF Environmental Program. As a specialist in Soviet civil defense research and planning, she wrote and lectured widely on the subject.

Gailar has served as a member of a Laboratory task force to develop a



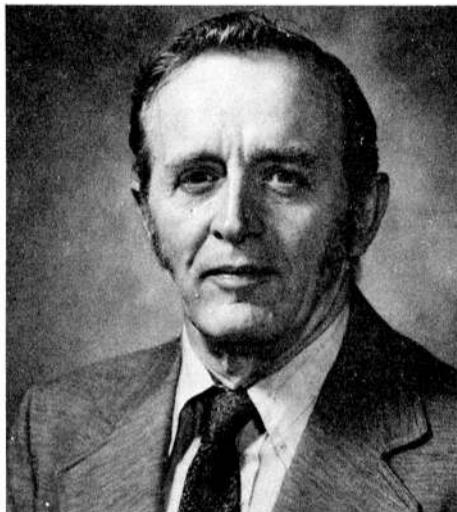
Joanne Gailar

long-range plan for human resources and of the ORNL subcommittee on internal recognition. She also has been an instructor in the Union Carbide Management Program.

Gailar is a member of the Knoxville League of Women Voters. She has three children.

She and her husband, Norman, a physics professor at the University of Tennessee, reside at 3521 Montlake Drive, Knoxville.

Coobs named to assistant post



John H. Coobs

John H. Coobs has been named technical assistant to Donald B. Trauger, associate director for nuclear and engineering technologies at ORNL.

Programs in nuclear and engineering technology represent the largest single area of research and development at ORNL. They include both developmental and safety research on systems for generating power from nuclear and other energy sources.

Coobs succeeds David J. Crouse, who has returned to the Chemical Technology Division, where he will work with the liquid-metal fast breeder reactor (LMFBR) fuel recycle program.

Since 1970, Coobs has served as associate director of ORNL gas-cooled reactor programs and manager for the High Temperature Gas-Cooled Reactor (HTGR) base technology program. He has held these positions on loan from ORNL's Metals and Ceramics Division.

A native of McGregor, Iowa, Coobs worked with the Manhattan Project at Ames Laboratories from 1942 to 1944, then transferred to the chemical development staff at the Y-12 Plant. In 1949 he received his bachelor's degree in chemistry from Iowa State University. He worked with the Nuclear Energy for the Propulsion of Aircraft (NEPA) Project in Oak Ridge for two years, and in 1951 joined the ORNL Metallurgy (now Metals and Ceramics) Division's powder metallurgy laboratory.

Coobs is a member of the American Nuclear Society and the American Association for the Advancement of Science. He and his wife, Bettie, live in Norris; they have three children.

safety scoreboard

Time worked without a lost-time accident through November 18:

Paducah	51 Days	631,000 Man-Hours
ORGDP	41 Days	1,312,000 Man-Hours
Y-12 Plant	17 Days	488,000 Man-Hours
ORNL	63 Days	1,339,958 Man-Hours

about people...



Fee Sommerfeld Ford Schacter

Charles E. Normand, ORNL Finance and Materials Division, has been elected chairman of the Industrial Development Board for the City of Oak Ridge. The nine-member Board was formed in 1962 to promote industry and develop trade in Oak Ridge and Anderson County.

Normand, a former city councilman who was first president of the Oak Ridge Chapter, Civil Defense Society, has been at ORNL since 1957.

* * *

James L. C. Ford Jr., ORNL Physics Division, was elected a Fellow of the American Physical Society last month.

A Nuclear Division employee since 1962, Ford holds a B.A. degree from the University of Montana and M.S. and Ph.D. degrees from the California Institute of Technology. He is a member of the Executive Committee of the Holifield Heavy Ion Research Facility Users' Group.

* * *

John Schacter, Assistant to the President of the Nuclear Division, has been named chairman of a national committee on energy education and communication for the American Institute of Chemical Engineers. A meeting of this committee is scheduled in Chicago November 30.

* * *

Two Nuclear Division engineers, Gordon G. Fee and Kenneth W. Sommerfeld, have been named "Eminent Engineers" in the Tau Beta Pi Association, a national engineering honor society.

The announcement was made by Edward W. Bailey, president of the Great Smoky Mountains Alumnus Chapter.

Fee, who heads ORNL's Engineering Technology Division, joined Union Carbide in 1956. In 1973, he was named manager of the light water reactor safety program at ORNL. The following year he was named director of the Laboratory's Reactor Division, which recently underwent a name change to the Engineering Technology Division.

Sommerfeld, Assistant Plant Manager at ORGDP, joined the organization in 1958 at the Y-12 Plant. In June, 1972, he was named Assistant Plant Manager at ORGDP.

retirements



Beecher D. Powell Metal Preparation, Y-12 7 years service

James C. Little Engineering, Y-12 33 years service

Christmas hours told for Company Stores

In response to inquiries, the following schedule for Company Stores in the four Nuclear Division plants are given for the month of December, Mondays through Fridays:

PADUCAH	
Dates	Hours
Dec. 1-22	8-9:30 a.m. 11 a.m.-12:45 p.m. 2:45 p.m.-4 p.m.
ORNL	
Dec. 2-22	10:30 a.m.-1:30 p.m.
Y-12 PLANT	
Dec. 3-17	10 a.m.-2 p.m.
Dec. 20-22	9 a.m.-3 p.m.
ORGDP	
Dec. 2-22	8-9 a.m. 11 a.m.-1 p.m. 3-4 p.m.

Color Television Center serves needs for four Division plants



Left: The Color Television Center team, Mike Shepherd (second from right), and Chuck Jones (right), prepare to record a scene in the Nuclear Division overview program. Clyde Montgomery (left), ORNL Biology Division, discusses the scene with Bob Wesley, producer of the video movie.

Below: Shepherd mans the control room in the Color Television Center while Jones moves a camera into position in the studio.

A new facility designed to provide color videotaping services for the four installations of the Nuclear Division is now in full operation.

The Color Television Center, with studio and control room facilities located in the Oak Ridge Y-12 Plant, has the mission of producing taped programs for employee training, management communication and video news releases. The Center is operated as a function of the Nuclear Division's Public Relations Department.

The Center is equipped with cameras and recorders for taping programs such as lectures and panel programs in the studio and has a portable, battery-operated system for taping assignments in the shops and laboratories of the Nuclear Division. A compact but sophisticated editing unit permits high-quality edits to be made of individually-recorded segments made at a number of locations. The system also permits the addition of a sound track complete with narration and music background, when music is appropriate. A film chain unit permits the dubbing of motion picture film scenes onto tape.

Playback equipment

The plan to centralize the Nuclear Division's color videotape capability within one facility to economize on equipment expenditure and effort while obtaining quality productions evolved from a four-installation planning group formed in late 1974. The group recommended that the Nuclear Division standardize its video equipment in the three-quarter-inch color videocassette format and that each installation be responsible for the transportation, setting up and handling of video playback equipment.

At present, ORGDP and the Y-12 Plant have purchased videotape projection systems that have a seven-foot, diagonal viewing screen. ORNL and PGDP also are adding to their video playback capabilities.

Planning and technical specifications for most of the equipment purchased for the studio was done by Ward Marsh of Y-12's electrical maintenance department. Marsh, a mem-

ber of the original video planning committee, played a principal role in the establishment of the facility. The studio is located in a former conference room in building 9766.

Coordinating committee

The video coordinating committee presently is composed of Bill Akers, Y-12; Janet Nunley, ORNL; Bob Seyfried, ORGDP; Keith Bryant, PGDP; Jim Little, Engineering; and Bob Wesley, General Staff.

Requests for color videotape recording services are forwarded from requestors through the video representatives of the installations. Any group wanting a color television program should contact the video representative of the appropriate installation.

Tapes to TV stations

Mike Shepherd, formerly a director with the educational television station in Knoxville, Channel Two, is in charge of videotape production. Charles (Chuck) Jones is the assistant. Bob Wesley supervises the Center's operation and assists with the productions.

Thus far, the Center has made a 54-minute overview of the Oak Ridge Gaseous Diffusion Plant (for internal use only), a training program on proper use of respirators, a United



Fund solicitor training program, a classified production for the Y-12 Plant and videotape news releases on such subjects as "Superheavy Element Discovery," "Graphite Reactor," "Fluidized Bed Coal Burner," "Potassium Vapor Topping Cycle," "ORGDP Toll Enrichment," "Aquatic Ecology," "PGDP Gold Recovery," "Walker Branch Watershed," and "Coal Hydrocarbonization." These tapes were distributed to the Knoxville television stations and used on local news programs. Some of the tapes were sent to stations in Nashville, Memphis, Paducah and Louisville (Ky.). The news clips range from about one and one-half minutes to two minutes in length to fit more easily into the news format.

Wesley said that additional video news releases are being planned for release to Kentucky television stations on such subjects as PGDP toll enrichment and the 25th anniversary of the PGDP operation in 1977.

Other programs planned

Also nearing completion is a 28½-minute videotaped overview of the Nuclear Division which has some 150 scenes made throughout the four installations.

Programs explaining Company benefits and policies are in the planning stage at the present time. Where possible, attempts will be made to generalize program requests so that programs made for one installation will be applicable to personnel at the other installations.



VIDEO COMMITTEE—Members of the Nuclear Division's video coordinating committee meet periodically to discuss program plans and equipment needs. From left are Keith Bryant, PGDP; Mary Ayles (representing Bill Akers), Y-12 Plant; Mike Shepherd, Color Television Center director; Janet Nunley, ORNL; Jim Little, Engineering; Bob Wesley, General Staff; Bob Seyfried, ORGDP; and Ed Aebischer, Public Relations, a visitor at the meeting.

Named supervisors at ORNL



Charles R. Kirkpatrick

Charles R. Kirkpatrick and Jimmy L. Trout, both of ORNL's Plant and Equipment Division, have been promoted to maintenance supervisor.

Kirkpatrick joined the Laboratory staff in 1963 as a pipefitter, completing his apprentice training in 1967, and later transferred to Y-12 Maintenance. In 1975 he returned to ORNL, where he was a supervisor trainee before his promotion.

A native of Knoxville, Kirkpatrick is attending the University of Tennessee where he is majoring in business administration. His home is at 104 Brentway Circle, Knoxville.

Trout, who joined Union Carbide in 1967 as an iron worker, was also a supervisor trainee prior to his promotion. Before coming to the Nuclear Division he was employed as a construction worker.



Jimmy L. Trout

Trout holds B.S. and B.A. degrees from the University of Tennessee in human services and natural science education. A native of Oakdale, he lives at Route 2, Oliver Springs, with his wife, Marilyn, and their three children, Melanie, Sherry and Billy.

patents granted

To George L. Powell and Cressie E. Holcombe Jr., both of the Y-12 Plant, for "Process for Removing Carbon from Uranium."

Ralph A. Potter and Victor J. Tenery, both of ORNL, for "Preparation of Uranium Nitride."

Louis H. Thacker, ORNL, "Compact Fast Analyzer of Rotary Cuvette Type."



REAMS OF REVIEWS—Truck drivers Roy E. Braden (left) and Boyd E. Edgemon load stacks of the Fall 1976 Bicentennial issue of the ORNL Review, preparing to head for the post office. The special issue, which covers highlights of 25 years of ORNL's progress in personal reminiscences by current and former employees, had a special mailing of more than 1,000 over the regular Review circulation.

question box

If you have questions on company policy, write the Editor, Nuclear Division News (or telephone your question in, either to the editor, or to your plant contact). Space limitations may require some editing, but pertinent subject matter will not be omitted. Your name will not be used, and you will be given a personal answer if you so desire.

Overtime policies

QUESTION: One of the requirements for a number 1 or 2 rating for a raise consideration for exempt employees in my organization is "working evenings and weekends." A supervisor I had previously said having to work overtime usually only showed poor planning and inefficiency. Is there any standard policy concerning the necessity for overtime work to get a good rating and a raise?

ANSWER: There is no policy requiring exempt employees to routinely work overtime on evenings and weekends as a prerequisite to a good performance evaluation and salary increase. It should be understood, however, that any job may from time to time require overtime—perhaps substantial amounts. If an overtime situation arises, it is expected that employees will make every reasonable effort to work. Failure to do so without good reason will properly be considered in the evaluation process which will in turn be reflected in salary.

Inter-plant job bids

QUESTION: I am a weekly salaried employee in the Engineering Division located at ORGDP but on the Y-12 payroll. Why can't I bid on any job that I am qualified for at any of the three plants? When the ORGDP salaried employees had the union vote, the Y-12 employees located at ORGDP were required to vote, whether they wished to or not. Is this fair? Will the bidding system be changed to allow bidding between one plant and another?

ANSWER: At the beginning of the Job Opportunity System, a little over two years ago, a determination was made to set it up on an installation-by-installation basis rather than Nuclear Division-wide. It was felt that this would provide the most effective, efficient and fair method of accomplishing the objectives of providing weekly salaried employees with knowledge of job openings and an opportunity to be considered for placement in those jobs for which they qualified.

This still seems to be the optimum arrangement, since the problems of geography, organization and sheer size of the weekly salaried group are still the same. Each installation is treated the same, so that the openings are available to those on that installation's payroll but are shielded from bidding by employees on the other installations' payrolls. While exceptions may be made for Nuclear Division officers, there is no plan to change the system from an installation by installation one to a division-wide system.

Small groups of employees physically relocated to another installation should normally be transferred to that installation's payroll when it becomes apparent that they will be there indefinitely. Ar-

rangements are under way for the transfer of several such employees.

UCC Management determines the rules for the Job Opportunity System, but the National Labor Relations board, a federal agency, determines who is eligible to vote in a representation election and their determination is binding on employees and the Company.

Faulty ERDA autos

QUESTION: The Company and ERDA spent much time and money conducting Defensive Driving courses for all employees. Yet, we are asked to drive government cars with thin tires, doors and windows that won't open, faulty rear-view mirrors and many other mechanical problems. Can't anything be done to upgrade vehicles? After all, it involves employee safety!

ANSWER: The automotive vehicle maintenance program is based upon operating standards designed to provide maintenance meeting ERDA and Nuclear Division safety requirements.

All vehicles are either in a three-month or six-month inspection program, depending upon their designated use. The inspection is similar to a standard safety lane inspection, including tire tread depth. For repairs needed between these inspection periods, we depend upon the driver to bring the vehicle to the garage for maintenance.

It is not intended for employees to drive vehicles which cannot be safely operated. If an individual questions the safety of any vehicle he is assigned to use, he should discuss the matter with his supervisor.

Mailing address mix-up

QUESTION: I don't understand the mail situation at Y-12. I transferred from ORNL about six months ago and since that time have not received one copy of Nuclear Division News. I'm not the exception—I know of several people in the same boat. Can't something be done about this?

ANSWER: Each of the Nuclear Division's installations is responsible for mailing copies of the newspaper to its employees. Installations other than Y-12 use address equipment compatible to master address tapes from Central Payroll, and Y-12 is planning to convert to this equipment. Until that time we urge employees who transfer to Y-12 to submit a UCN-4488 card—Address and Other Changes, with the home address indicated. We will seek to update our mailing list to employees in this manner until the new equipment is installed. We thank you for calling this matter to our attention.

next issue . . .

The next issue will be dated December 9. The deadline is December 1.

Eight-legged cohort aids craftsmen's work

When it comes to furthering the cause of research and development in the Nuclear Division, everyone is expected to chip in. And there are times when "everyone" is not limited to *homo sapiens*.

In the Fabrication Department of ORNL's Plant and Equipment Division, a black widow spider is occasionally numbered among the "employees."

The spider's task—simple enough—is to spin a web, which is later used by craftsmen in making cross-hair reticles for the eyepieces of microscopes and telescopes.

Why spider webs? "The Laboratory began using spider webs in the late 40's or early 50's, before mass production techniques were available," said Nelson E. Wilkins of dimensional inspection, who supervises the work. Even today the spider



*Tale's hero—
or heroine:
Latrodectus mactans,
the black widow
spider.*

web holds some advantages over other methods, such as photo-etching or the use of tungsten wire or quartz fibers, Wilkins said. It is strong: a length of web can lift a five-gram weight. It is flexible, able to withstand expansion and contraction that eventually causes tungsten to fatigue and snap. And it makes a thin, fine line, ideal for precision optics. The black widow's web is used specifically because it is superior to that of other spiders in all of these characteristics.

Web 'stored' for later

Ned Clark and Charles C. Barnett, craftsmen in dimensional inspection, who service microscopes and analytical balances and scales, do the actual work of obtaining and preparing the webs and fastening them to the eyepieces. The process begins, obviously, with obtaining a spider. Actually, this need be done only occasionally: one spider can spin enough web to be used for a long time, especially since this type of work is done infrequently.

"The web being used now was pulled about 10 or 15 years ago," Wilkins said, "and we're now at the point where we need some more. I've alerted Environmental Sciences Division to be on the lookout for a spider." Clark caught the last spider at his home, but has had no luck this time—"this must be a bad year for them."

(Keeping a black widow "in residence" can have its problems. Wilkins recalled an incident when a spider being kept in a carboy chose that particular time to produce a family: "One afternoon she laid her eggs, and by the next morning we had about 1,000 black widows. We had to call the exterminators to get rid of them!")

Separated into filaments

The web is obtained by placing the spider on the end of a pencil and

shaking the pencil. This induces the spider to spin a web strand, which is wound on a rack as the spinning progresses.

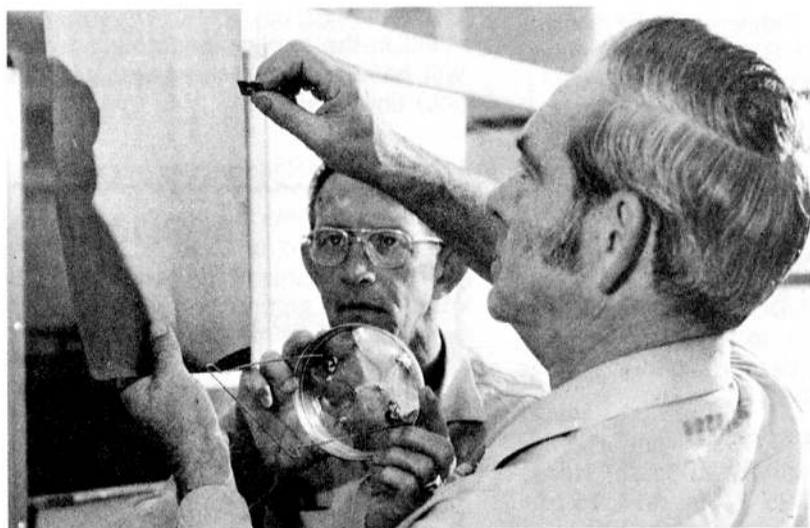
"A spider web is composed of from one to four filaments when it is spun, and we need to separate it to get the thinnest strands possible," Clark said. "We do this by holding the web strand under an air stream—against a piece of black paper so we can see it—and combing the end with a razor blade to break the fibers so we can pull them apart."

When a thread end is isolated, the thread is pulled with tweezers and fastened with cement to the ends of a spring-loaded caliper for easy handling. Finally, the fragile filament is positioned and glued in place on prescribed lines on the eyepiece being worked on. This final procedure, Clark said, takes only about 30 minutes: "not too long, after you get used to doing it."

Used in telescopes

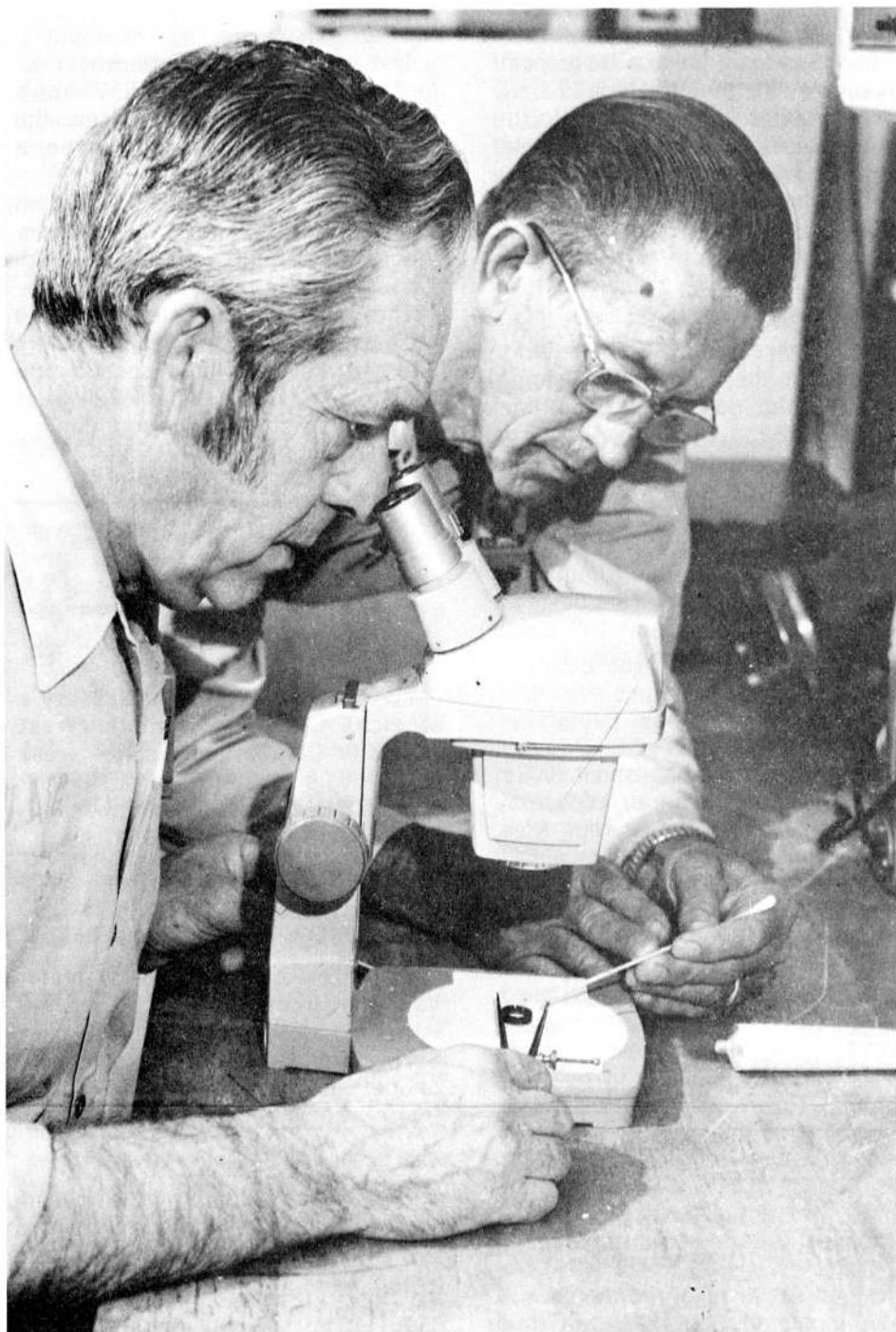
The most recent job completed was a reticle to be installed in the Total Station Distance Meter used by surveyors in Engineering's civil and architectural engineering group. The meter, which uses a laser beam to measure distance, came equipped with a 20-power telescope, which turned out not to be powerful enough for the surveyor's purposes. Fabrication built a new telescope of approximately 30 power, and spider web proved to be the only material fine enough for the magnifying eyepiece.

There is not a lot of call for the spider web technique—"the last job we did before the Distance Meter was about a year ago," Clark said. But when the occasion arises, dimensional inspection must be ready. So if anyone happens to see a black widow spider ...



Left: Ned Clark, right, uses a razor to separate a web strand, using a sheet of black paper to make the strand visible. Charles Barnett holds the rack wound with the stored web.

Above: Clark and Barnett glue the web filament on the eyepiece, following prescribed lines.



anniversaries

ORGDP 30 YEARS

William W. LeMarr, Physical Measurements Department; Alfred C. Hoskins, Building Maintenance Department; Sebastian W. Palmer, Separations Plant Department; Harold B. Gunter, Chemical and Technical Maintenance Department; James E. Baker, Engineering Division; and Marion B. Livesay, U-235 Separation Department.

25 YEARS

Roy G. Brown, James A. Jones, Clyde E. Mathews and Herbert H. Greene.

PADUCAH

25 YEARS

Ernest R. Warford, William M. Monroe, Willett C. Johnson, Carl E. Golightly, Doyle B. Allison, Carlton M. Graham and Frederick D. Gaddie.

ORNL 30 YEARS

John A. Ellis, Finance and Materials Division; Robert L. Blair, Engineering; Charles C. Hurtt, Engineering Technology Division; George Reed, Plant and Equipment Division; James W. Brashier, Plant and Equipment Division; John W. Dabbs, Physics Division; David L.

(Please turn to page 8)

With the bowling leagues . . .

Carbide Family Mixed

The Oops team holds a three point advantage in the Carbide Family Mixed League, edging out the Challengers who stay one step ahead of the Odd Balls. John White rolled a 559 scratch series recently; Winnie Woody a 494.

Y-12

The Ridgers and the Rebels tie for first place in the Y-12 Classic League. Bill Sise holds down high game thus far with a 282 . . . and Eddie Edwards and Marvin Anderson hold down series highs . . . each with 729 and 703.

The Mini-Strikes have a slight edge in the C League, with the Rounders a breath behind. Jules Kendra posted a 713 series recently; and Bill Smith put a 271 game up on the boards.

ORNL

The Mousechasers push ahead in the ORNL Ladies League, miles away from the HP-Ettes and Bowling Aces. Clyde Montgomery's 210 single, 524 series stands high.

The Damagers enjoy a commanding lead in the C League, way in front of the Remkeys and Timberwolves.

The Ten Pins climb higher in the A League, over ARAU and the Turkeys. Their ace, Cardwell, rolled a 654 series early this month to help the winning cause.

Carbide Canoe Club . . .

Natalie Wiest will show movies and slides of her trip through the Grand Canyon at next week's meeting of the Carbide Canoe Club. The meeting is set Monday, November 29, at 7:30 p.m. at the First United Presbyterian Church, Oak Ridge.

The Club is a branch of the East Tennessee White Water Club and seeks to promote canoeing and kayaking as a water sport, teach boating techniques and water safety for river travel, and preserve our remaining wilderness rivers for future generations.

Skeet league . . .

Y-12's Orville Laueredine took first place in October's skeet firing; with Ronnie Crawford and Roy Hicks, ORNL, taking second and third places respectively. Crawford's 48.337 trailed Laueredine's 48.511 only by fractions; Hicks clipped off a 47.684.

Physical fitness classes . . .

The Recreation Department is starting the New Year with a program of physical fitness classes, due to begin January 3. They will be held each Monday, 7 and 9:30 p.m.; and Wednesday, 6:30 and 9 p.m. at the Norwood Junior High School, near Oliver Springs.

Interested persons should call the Recreation Department, extension 3-5833.

ORGDP

The Woodbees and Uptowners tie for first place in the ORGDP Women's League. Ruby O'Kain burned the woods recently with a 226 game, a 612 series.

The Mix-Ups inch into the lead in the Wednesday Night League. Larry Woods and Paul Febbo hold high games of 277 and 269 each.

The Tuesday League sees the Mishaps out front, as the All Steers and City Slickers hold second and third place. Hal Gunter's 643 series still stands high in league counting.

wanted



ORNL

TWO RIDERS from St.Mary's Medical Center, Lonsdale, West Haven or Cumberland Estates areas in Knoxville to either portal, 8 a.m. shift. M. B. Brister, plant phone 3-6430; home phone 546-8062.

CAR POOL MEMBER from Alcoa Highway area to any portal, 8 to 4:30 shift. D. A. Dyslin, plant phone 3-1761.

RIDERS to join Knoxville Commuter Van Pool from West Knoxville, I-40 Papermill Road exit area or Walker Springs Road exit. R. L. Pearson, plant phone 3-1875; home phone 588-9949.

Y-12 PLANT

RIDE from Victor Drive, Norwood section, Knoxville, to Central Portal, straight day. C. A. Crutchfield, plant phone 3-7613, home phone Knoxville 688-4906.

CAR POOL MEMBER (with car) from Cedar Hills section, Kingsley Road, Oak Ridge, to any portal, straight day. J. P. Seagle, plant phone 3-7718, home phone 482-2082.

ORGDP

DRIVERS for car pool from Norris to K-25 portals 2, 4 and 8, straight day. Gordon Lindner, plant phone 3-3543, home phone Norris 494-7954.

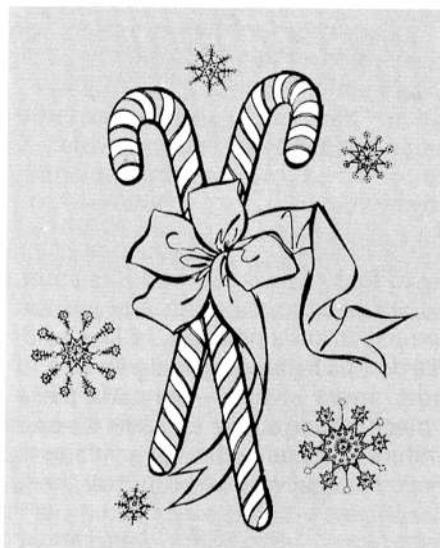
JOIN CAR POOL from Lonas Road, West Knoxville, to K-25, straight day. Mark Sellenberger, home phone Knoxville 584-8841.

JOIN CAR POOL from Hickory Valley Road, off 441, South, Norris Freeway, to K-25. 7:45 a.m.-4:15 p.m. shift. Marian Yeager, plant phone 3-9463, home phone Norris 494-7280.

JOIN CAR POOL from Papermill Road, Knoxville, to any portal, straight day. Mike Church, plant phone 3-3421.

RIDERS for VAN POOL from Alger Road, East Oak Ridge, west to East Drive, Outer Drive (Georgia Ave.) to New York Avenue and Oak Ridge Turnpike to Portals 1 and 2, 7:45 a.m. to 4:15 p.m. W. D. Joyner, plant extension 3-3647, home 483-0952.

RIDE from Ball Road, Knox County, to Portal 5, "D" Shift. Jack McKinney, plant phone 3-3476; home phone 690-1888.



ORGDP Christmas dance . . .

Committeemen and women in ORGDP are busily engaged in preparations for their traditional Christmas dance. It will be held again this year at the Oak Ridge Civic Center, December 11, with a social hour beginning at 7:30, and the dance getting underway at 9 p.m. Music for the affair will be provided by the Alexander Brothers.

Tickets, \$6 per person, are available in all divisions throughout the plant.

Christmas parties set

Plans are now firm for Christmas parties for both Oak Ridge and Paducah children of Union Carbide employees.

The big Paducah party is set for Saturday, December 11, at 9 a.m. in the Arcade Theater. Five parties will mark the festivities for Oak Ridge children, 9 and 11 a.m., 1, 3 and 5 p.m. at the Oak Ridge High School, Monday, December 22.

Both locales are limiting attendance to children from 2 to 10 years of age. Both children and parent or parents need tickets, and applications for both locations appear in this issue of the Nuclear Division News.

All parties will include carol singing and cartoons, and, of course, a visit from Old St. Nick.

Highlighted in the Oak Ridge parties will be Austinini and his clogging and magic show, with plenty of rabbits from hats and other tricks to thrill the audience. Also featured will be Larry Bohanan with his hand-made puppets. Both Larrys (Austinini is really Larry Austin) are Y-12 employees and perform as "different drummers" with their talented hobbies.

Ticket application deadline for Paducah is already past . . . and the deadline for Oak Ridge applications is December 17.

Fill in the applications now, so you will have a better chance at getting your time choice.



SNOOPY AND FRIEND—Santa Claus, impersonated by Fred Johnson, shares a moment with Snoopy. Johnson, retired from the Oak Ridge Gaseous Diffusion Plant, will again portray the jolly old elf at the Carbide Christmas parties in Oak Ridge.

Oak Ridge Christmas Party application is on page 7.

APPLICATION FOR TICKETS

Requests MUST Be In By November 24

PADUCAH CARBIDE CHILDREN'S CHRISTMAS PARTY
(For Children Ages 2-9)

SATURDAY, DECEMBER 11, 9 A.M.

(Doors will open at 8:30 a.m.)

ARCADE THEATRE, PADUCAH, KY.



Employee's Name _____ Badge No. _____

Home Address _____

(Please Print Street Address or RFD, City and Zip Code)

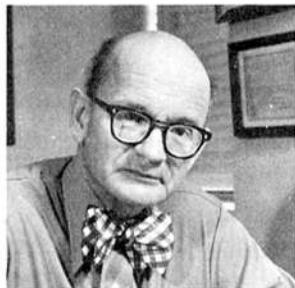
Number of your children who will attend the party (please list):

Name _____ (BOYS) Age _____ Name _____ (GIRLS) Age _____

Name _____ Age _____ Name _____ Age _____

Name _____ Age _____ Name _____ Age _____

List names, ages and sex of children very accurately. The information will be used to bring present records up to date. NOTE: Fill out form completely and return as soon as possible, but not later than November 24, to the Recreation Office, Union Carbide Corporation, P.O. Box 1410, Paducah, Ky. 42001. Tickets will be mailed to parents at their home addresses.



Nausea and vomiting

by T. A. Lincoln, M.D.

(Editor's Note: Dr. Lincoln alternates his regular column with "The Medicine Chest," where he answers questions from employees concerning health in general. Questions are handled in strict confidence, as they are handled in our Question Box. Just address your question to "Medicine Chest," NUCLEAR DIVISION NEWS, Building 9704-2, Stop 20, Y-12, or call the news editor in your plant, and give him or her your question on the telephone.)

Thanksgiving may seem like a strange time to talk about nausea and vomiting, but if you will read on, you may find a new use for these miserable symptoms.

Individuals who have recently recovered from an acute gastroenteritis sometimes report that early in their illness they feared they might not survive. After awhile, they **hoped** they wouldn't survive, so they could escape the torture of their writhing guts. In startling contrast is the star athlete who routinely vomits before every big game, or the nervous bookkeeper who runs to the rest room to vomit every time he can't make his books balance.

Associated symptoms

If asked what happens physiologically during vomiting, most people would probably guess that the stomach dramatically reverses itself. It violently contracts and forces its contents up the esophagus and out the mouth. Surprisingly, the stomach is actually a remarkably passive organ during vomiting. If you will recall your last episode, you will remember that your heaving was caused by the violent contraction of your abdominal muscles. They are the ones that empty the stomach, not the stomach itself.

Nausea is usually described as a "sick to the stomach feeling" which refers to an imminent desire to vomit. It is frequently associated with many other unpleasant symptoms. There is a feeling of faintness, weakness and acute uneasiness. There is a gushing flow of saliva, the face becomes pale and sweating is often profuse. There may be a sudden drop in blood pressure, causing fainting. The pulse may slow noticeably and dizziness can be severe.

If nausea is not immediately followed by vomiting and it persists, appetite is totally absent and the thought or smell of food makes the nausea much worse. If a person is up and about or sometimes even in bed, there is an anxiety and indecision which develops. "Will it go away if I just stay quiet and maybe take deep breaths, or should I bolt now and hope I can make it to the bathroom before I heave?"

Abdominal muscles contract

Retching is defined as the labored rhythmic activity of the breathing muscles which either precedes or accompanies vomiting. It is not synonymous with the "dry heaves,"

which usually refers to the continued efforts to vomit without any results.

During vomiting, the lower end of the stomach (called the pylorus) contracts, preventing the contents of the stomach from being forced into the first part of the small intestine. The upper part of the stomach relaxes, as does the opening into the esophagus. During this process, the lower border of the stomach may actually fall a couple of inches.

The force to expel the stomach contents is produced by a sudden descent of the diaphragm and a violent contraction of the abdominal muscles. Individuals who have experienced prolonged vomiting will recall how sore their abdominal muscles were the next day.

As the vomitus goes up the esophagus, the larynx is drawn forward and the soft palate is elevated so the material will not be forced into the nose and will go out the mouth. The glottis (the opening at the upper part of the larynx between the vocal cords) is closed so the vomitus does not enter the trachea and get into the lungs.

Sometimes with prolonged vomiting, reverse peristalsis occurs, bringing bile-stained materials back into the stomach from the small intestine.

Physical and psychological causes

There are hundreds of causes of vomiting. It used to be thought that vomiting was either caused by a direct stimulus to the vomiting center in the brain or by stimuli arising in other parts of the body and then indirectly activating the vomiting center. It is now known that there is an accessory center in the medulla of the brain which is receptive to chemical and nervous stimuli, which are then forwarded to the vomiting center. Direct activation of the vomiting center is less common than indirect activation.

Vomiting may be caused by a "sickening" blow to the testicles or lower abdomen. It is often associated with severe headaches, especially migraine. Irritation of the stomach, gall bladder, liver, pancreas and intestines due to many diseases can cause vomiting.

Many medicines will cause vomiting, either as an allergic or toxic reaction. Apomorphine and ipecac are two medicines used to induce vomiting in order to quickly empty the stomach.

Vomiting is a common symptom associated with the onset of any infectious disease. The common acute gastroenteritis, the so-called "stomach flu," is almost always accompanied by some nausea and vomiting. Motion sickness and even heart attacks are also common causes.

Psychic stimuli frequently lead to vomiting. Some patients with chronic nervous problems can vomit after eating without experiencing any severe nausea and can then go back

to work. Some prima donna concert artists will vomit before a concert or a show and then still put on a sensational performance. The ancient Romans, during a gustatory orgy, used to stick their fingers down their throats in order to vomit so they could go back and eat more.

So, all in all, nausea and vomiting are usually miserable symptoms when they are forced onto us by acute disease. Under "voluntary" circumstances, however, they can calm frayed nerves and even empty over-stuffed bellies!

Conservation plays can temper energy use increase, report says

Residential energy consumption in the U.S. may rise only 10 percent between 1976 and the year 2000 if Americans adhere now to a vigorous conservation program, according to a new ORNL study.

The report, "Residential Energy Conservation Strategies" by Eric Hirst, is part of a study sponsored by the ERDA and the Federal Energy Administration (FEA), and carried out by the Laboratory's Energy Division.

The study shows that implementation of energy conservation programs to increase the efficiency of new household equipment and improve the thermal integrity of both new and existing housing units, coupled with higher fuel prices, can have a significant impact on energy use.

The result would be to reduce the historical growth rate nearly 10 times—from 3.6 percent per year experienced between 1950 and 1975 to only 0.4 percent annually between 1975 and 2000. This overall increase of 10 percent in residential energy use in the next 25 years compares to a growth of 100 percent (or doubling) during the previous quarter century.

These findings assume no lifestyle changes on the part of American households other than those, such as declining rates of population growth and household formation, whose effects are calculated in the study, nor do they assume use of solar energy for any household functions. Thus, the author concludes, energy use in the

year 2000 could be kept at the present level with only slight lifestyle changes, modest use of solar energy, additional improvements in efficiencies of equipment and structures, or combinations of the above.

The study used an engineering-economic computer model of national residential energy consumption to evaluate the energy impacts, from 1975 to 2000, of changes in household formation, housing choices, income, fuel prices, equipment efficiencies, and thermal integrities of new and existing residential buildings.

Between the end of World War II and the early 1970's, residential energy use grew steadily and rapidly because of growth in population, households, and income; declines in retail fuel prices; and the introduction of new household labor-saving devices. The result of these changes was an average annual growth rate in household energy use of 3.6 percent between 1950 and 1975.

The report notes, however, that a number of forces have emerged that may significantly alter these historical trends. Recently, growth in population and households has been much slower than in the past. Also, residential fuel prices began to increase around 1970, after two decades of decline. Because of the increases in fuel prices, personal consumption expenditures on household fuels rose 27 percent between 1970 and 1974.

(Please turn to page 8)

Application for Tickets To Christmas Parties

FOR CHILDREN OF OAK RIDGE UNION CARBIDE EMPLOYEES
(AGES 2-10 ONLY)

MONDAY, DECEMBER 22

Plant

Employee's Name

Home Address

Plant Address

Number of Tickets (Children)

Number of Tickets (Adults)

—CHECK TIME PREFERRED—

Monday, December 22 9 A.M. 11 A.M. 1 P.M.
Only 3 P.M. 5 P.M.

Please check first and second choice (write in space "1" or "2") as only a limited number of tickets will be issued for each party. Preference will be given early applicants and if tickets for first choice are exhausted, tickets for second choice will be issued.

Return this form, properly and completely filled in, to the Carbide Recreation Office, Building 9711-5, Stop 1, Y-12 Plant. Please apply for tickets before December 17. The required number of tickets will then be mailed to parents at their home or plant addresses.

Heavy duty driving instruction offered at ORGDP



A comprehensive heavy duty truck driver training program is in progress at ORGDP, unique in the Nuclear Division. The General Maintenance and Plant Service Departments have joined to conduct training in the care, protection and preventive maintenance of heavy duty trucks. Charlie A. Duncan and George E. Proffitt have received training and are now instructors for the program.

Two heavy duty drivers will receive certification every two weeks until all drivers in that category are trained.

The training involves both classroom and over-the-road instruction, and is designed to assure the safe operation and reduced maintenance cost on this type of equipment. Shown in the photograph, from left, are Proffitt, Duncan, Ray O. Allison and Ronald L. Keeler.

Conservation

(Continued from page 7)

The research is currently being used by both supporting agencies. ERDA uses it for evaluation of research and development programs, including improved light bulbs and more efficient windows for future homes. FEA uses the model in evaluating energy and expenditure impacts of conservation policies and programs, including their appliance efficiency program for 1980. Another use of the study will be in the evaluation of programs developed in response to a new bill passed by Congress in August entitled "Energy Conservation and Production Act" which involves energy conservation standards for new buildings and energy conservation financial assistance for existing buildings.

Cold weather energy-saver

Setting nighttime temperatures back can reduce heating costs significantly. Consider the advantages of a clock thermostat which will automatically turn the heat down at a regular hour before you retire and turn it up just before you wake.

18-24 age group needs second swine flu shot

The Kentucky and Tennessee Public Health Departments have issued a recommendation that persons 18 to 24 years old should receive a second swine flu vaccine injection. This should be given some four to six weeks after the first injection.

All the health centers have a supply of bivalent vaccine (swine and Victoria) which has been given to high-risk individuals. This will be given to anyone who wants to take it on a "first-come, first-serve" basis, as long as the supply lasts.

Source recovery

(Continued from page 1)

500 pounds in weight. It has two television cameras mounted behind the arm to transmit pictures to monitors on the control console. The cameras have lenses to permit both distant and close-up views.

Used equipment sale set for December 8

There will be a used government-owned office equipment and vehicle sale early in December: the "spot bids" will be opened at 9 a.m., December 8.

The materials may be inspected at the Sales Office, ORGDP, Powerhouse Area, Building K-722, located off State Route 58, Oak Ridge. The items may be seen from 8:10 a.m. until 4 p.m. through December 7, excluding Sundays, and this weekend, November 25, 26, 27 and 28.

Additional information may be obtained from D. R. McCammon, extension 3-4601.

anniversaries

(Continued from page 5)

Holcomb, Plant and Equipment Division; and Frank Bayless, Plant and Equipment Division.

25 YEARS

James A. Barker, Robert E. MacPherson Jr., William H. Culbert, Katherine P. Jones, Billy L. Greenstreet, John J. Manning, William R. Winsbro, George C. Guarrant, Alvin R. Irvine, Ernestine R. Kackenmester, Donald L. Gray, Arthur S. Dworkin, Paul E. Easter, W. T. McDuffee Jr. and Elizabeth B. Howard.

20 YEARS

James M. Odom Jr., Rodney W. Knight, Wilma B. Greene, James L. Scott, Raymond G. Wymer, William E. Davis, Betty P. Freels, Bobby J. Copeland, James H. Shaffer and Richard B. Malcolm.

Y-12 PLANT

30 YEARS

William Y. Gissell, Plant Protection Department; Clyde W. Schaffer, Material Transfer and Packing; Jess Johnson, Area 5 Maintenance; and Ernest Lawson, Buildings, Grounds and Maintenance Shops.

25 YEARS

Lon W. McNeil, Glenn H. Barton, Clade J. Allmon, Raymond E. Justice, Mendel Maskewitz, Owen A. Hammonds, Helen H. Long, Henry L. Finn, Glenn E. Fisher, Billie H. Britton, Thomas J. Walters, Jesse L. Spray and Offie Trull.

20 YEARS

Louise C. Egner, James E. Somers and Raymond B. Thompson.

GENERAL STAFF

30 YEARS

Betty L. Jeffers, General Industrial Relations Division.

25 YEARS

Irvin G. Speas and Charles E. Williams.

20 YEARS

Mendele P. Phillips.



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