

Nuclear Division News



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

Vol. 8, No. 3/February 3, 1977

Toll enrichment \$332 million for last year

More than \$332 million in toll enrichment services were recorded at the Oak Ridge Gaseous Diffusion Plant during 1976. This compares to \$253 million in calendar year 1975, and \$144 million in 1974.

Under the Toll Enrichment Program, privately licensed owners bring their uranium to the Gaseous Diffusion Plant for enriching on a toll basis. Customers are charged for the services required to separate from natural uranium the desired percentage of uranium-235 isotope, usually between two and three percent.

During 1976, reactor facilities in 14 states and 7 foreign countries participated in the Toll Enrichment Program at the Oak Ridge Gaseous Diffusion Plant. The \$332 million in services was for enrichment furnished to more than 2,800,000 pounds of customer uranium.

The Paducah Gaseous Diffusion Plant and the plant at Portsmouth, Ohio, also participate in the uranium enrichment program.

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1976: second-best on-the-job record

Nuclear Division employees ended 1976 with the second lowest injury frequency rate in history, 0.39. This is the lowest since the record-breaking rate of 1968, which was 0.23. (Disabling injury frequency rate is the number of lost-time injuries incurred for every million man-hours worked.)

ORNL achieved the best 1976 safety record of the four installations, working 7,643,614 hours with only one disabling injury for the entire year. This matched the all-time, 29-year low frequency rate of 0.13.

Injuries described

The other three installations achieved the following frequency rates for disabling injuries: PGDP, 0.97; Y-12 Plant and ORGDP, each 0.37.

What was the nature of disabling injuries on the job during 1976? The most serious of the 13 occupational disabling injuries was a near fatal electrical accident which resulted in an employee receiving serious burns over 50 percent of his body. Falls, the primary cause of injuries, resulted in back, leg, arm and finger injuries. Two injuries resulted from falling objects which caused body and leg injuries; two resulted from automobile accidents which caused face and arm injuries; one resulted from an employee's hand being caught in a baling machine; and one resulted when an employee received an eye burn from a caustic solution. It should be noted that 11 of these serious injuries were

caused by unsafe acts, and two can be attributed to a combination of unsafe conditions and acts.

The overall 0.39 frequency rate compares favorably when measured against other standards. Preliminary data indicate that Union Carbide Corporation's frequency rate will be 0.85. The frequency rate for all the chemical industry was 3.99.

Honors earned for the year include: UCC's Distinguished Safety Performance Award for ORGDP's 4,314,479 man-hour, 181-day period without a lost-time accident; ORNL for 6,375,994 hours in a 309-day

period; and Y-12 for 7,110,652 hours in a 239-day period; ERDA's Award of Achievement to ORNL and Y-12 for a reduction in OSHA recordable lost-workday cases; the National Safety Council's Award of Honor to ORGDP for improvement in disabling injury and severity rates; to ORNL for the more than six million man-hours worked consecutively without a lost-time injury; and to Y-12 for the more than seven million man-hours worked; the National Safety Council's Award of Merit to ORGDP for a 1,763,551 safe man-hour period; and to the Paducah Plant for almost a two million man-hour safe period.

SAFETY POLICY

It is the policy of the Nuclear Division to maintain an effective accident prevention program. Whenever our safety objective conflicts with other objectives, safety shall be our first consideration.

"People are our most important asset -- their safety and health our greatest responsibility."

UNION CARBIDE CORPORATION
NUCLEAR DIVISION



Off-the-job injury rate for year takes away luster

So much for the good news. Now for the bad. Nuclear Division employees experienced 272 off-the-job disabling injuries last year, including six fatalities, resulting in a frequency rate of 4.13. Of these 272 injuries, 113 were in the home, 98 in transportation and 61 in public. The employee days lost due to off-the-job disabling injuries totaled 9,308, including the customary charge of 6,000 days for each fatality, the total days charged for off-the-job injuries is 45,308—more than 35 times the days lost due to occupational injuries.

Of the six fatalities, four were attributed to automobile mishaps; one when an employee was burned while disposing of trash; and one employee was struck by lightning on a fishing expedition.

Safety officials point out that probably more than 272 disabling injuries were sustained off-the-job . . .

that many were reported. Current reporting procedures require that only those disabling injuries which result in four or more lost workdays are recorded. Officials urge all employees to report off-the-job accidents promptly so that accurate records may be kept.

Concerted effort

A special effort is planned to help reduce off-the-job injuries for 1977 and to minimize lost work days. In addition to efforts to lower on-the-job serious accidents, all four Safety Departments plan to stress home safety and safer driving habits during their 1977 safety meetings.

An accident is an accident is an accident, regardless of where it happens. Its toll in pain, expense and inconvenience is just as great when it occurs at home, or on the highway, as

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ERDA AWARD RECIPIENTS—Three ORNL employees were among those honored at an ERDA awards ceremony held in Washington recently. From left are: John Clarke, Fusion Energy Division, recipient of the Distinguished Associate Award; William Russell, Biology Division, Enrico Fermi Award recipient; Robert Seamans, former ERDA Administrator; and A.L. "Pete" Lotts, Metals and Ceramics Division, who received the E.O. Lawrence Award.

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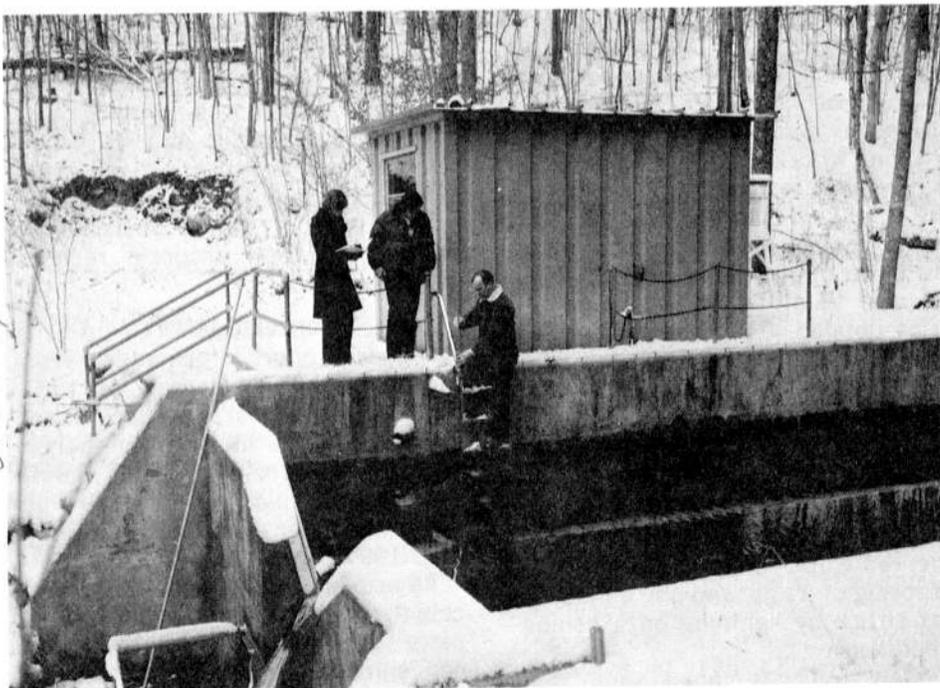
Snow scenes around the Y-12 Plant last week (photos by Charles L. Tucker)

0299-77



WINTER WONDERLAND—ORNL employees who recently have driven through the HFIR/TRU area (Melton Valley Drive) have been captivated by this picturesque scene. The unusual ice formation is caused by discharge from a steam trap onto surrounding vegetation. (Photo by Jim Richmond).

0319-77



FROSTY WEIR—Nature rims the weir of ORNL's Walker Branch Watershed with a frozen crust of snow.

The historic winter of 1977

At least we'll have something to tell our grandchildren, as winter reached its half-way mark this week. With chilly houses, curtailed activities, red noses, and chilled bones, our photographers browsed around last week to catch some of the beauty of the worst winter in our history.

Unaccustomed as we are to this kind of weather, we can do a lot to protect ourselves from injuries and pneumonia. Stay at home unless it is necessary that you get out. Wear ample clothing, the National Safety Council says.

Beware of walking on ice and skating is even deadlier. It may be too thin to support you properly.

Below we have compiled some hints from the Council and the American Automobile Association that may help you guide your vehicle over snow and sheet ice.

With fuel shortages, try to observe the thermostat suggestions. We're all in this together.

Meanwhile, nobody minds if we hope for an early spring, do they?

How many of these winter driving tips do you know?

- Be gentle. A light foot on your accelerator is less likely to produce wheel-spinning on ice and snow. And remember that these surfaces are twice as slippery at 30 degrees as they are at zero.
- Get the feel of the road by careful acceleration to test wheel-spin and gentle braking to test skidding. Cut your speed to match your findings. (One-half the speed limit sometimes is not slow enough.)
- Extend your following distance to provide for the three- to nine-fold increase in stopping distances on ice and snow.
- When braking, pump your brake pedal rapidly to keep your wheels rolling and maintain steering control.
- Make your turns more slowly and gradually on ice and snow, especially at heavily traveled intersections which can become "polished" by repeated slipping and sliding of tires.
- In case of a skid, if you plan to follow the advice to "turn your wheels in the direction of the skid," count on at least a small second skid in the opposite direction. Prepared, you can also "turn into" this one to regain full control.
- If you hit an ice patch while cruising on a generally clear road, stay away from the brake. Just take your foot off the gas and steer as straight as possible until your car slows to a safe speed.
- As a last resort to avoid a collision, you can cut your speed by intentionally sideswiping the snowbank formed by a snowplow on the road's shoulder.

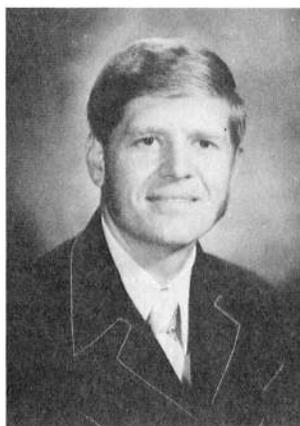
Four promoted at Paducah



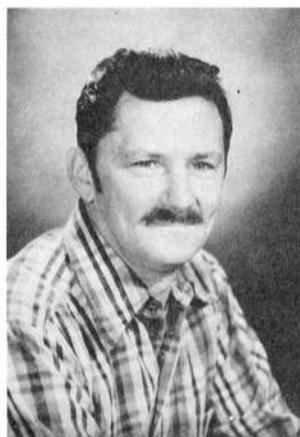
Ashburn



Belt



Boss



Du Berry

Four recent promotions have been announced at the Paducah Plant. David L. Ashburn has been made a health physics technician on the technical staff; Vernon R. Belt has been promoted to a fire and guard lieutenant; Warren J. Belt is a new supervisory trainee in the Maintenance Division; and Eddie Du Berry is a new supervisor in Maintenance.

Ashburn, a native of Cairo, Ill., worked as a student trainee in Paducah, and also as a summer employee before joining Union Carbide last year. He has a B.S. in biology from Murray State University.

He and his wife, the former Gail Fox, live at River City Trailer Court, Paducah.

Belt is a native of Paducah, and worked as a firefighter there before joining Union Carbide in 1976. He is attending classes in fire science at Paducah Community College.

Mrs. Belt is the former Eva Kay Walker, and the couple lives at 301 Ashcraft Avenue, Paducah.

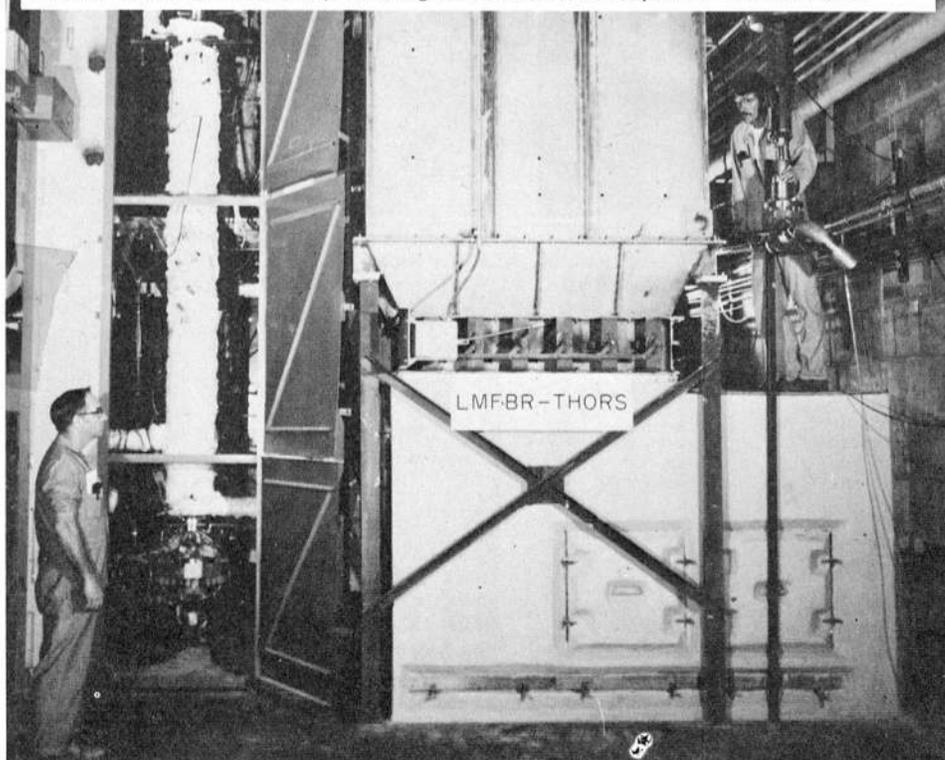
Boss was born in Oak Park, Ill., and has been at the Paducah Plant two years. Prior to that time he was an industrial arts teacher.

He and his wife, the former Judith Phillips, live at Brookport, Ill. They have a son, Derek.

Du Berry, a native of Kevil, attended Tilghman Trade School before joining Union Carbide last year. He also worked at McDonnell-Douglas Aerospace, Aerohead Products and G & S Leasing Company in Paducah.

He and his wife, the former Virginia Miller, live at Route 4, Kevil. They have eight children: Sue Kidd, Don, Melanie Lamb, Mark, Scott, Angel, Daniel and Lee Ann.

THORS UPGRADED—W.R. Malcolm (left) and W.K. Forrester, Y-12 Maintenance Division, check out the two-megawatt heat exchanger recently installed in the Thermal Hydraulic Out-of-Reactor Safety Facility (THORS). A project of ORNL's Engineering Technology Division, THORS is an experimental rig designed to test simulated fuel assemblies for liquid metal fast breeder reactors. The new, larger heat exchanger represents a power level upgrade for THORS of one-and-one-half megawatts, making it possible to test large-size, full-length simulated fuel assemblies for the Clinch River Breeder Reactor and future LMFBR designs. Open doors on the vertical housing at left show the facility's test fuel assembly housing and electrical and power connections.



Roger Davis named director of Y-12's Technical Division

171508

Roger L. Davis has been named director of the Technical Division in the Y-12 Plant, according to an announcement from James C. White, manager of Technical Services for the Nuclear Division. He succeeds E. F. Gambill, who was recently named head of the Office of Quality Assurance.

Reporting to Davis will be the Radiation Safety, Standards and Surveys, Statistical Services and Quality Control Departments.

Davis, a native of Lawrence County, Tenn., originally worked with the Nuclear Division as a co-op student while attending the University of Tennessee. He holds a bachelor's degree in mechanical engineering and a master's in business administration, both from UT. Upon earning his undergraduate degree, he worked as a product engineer for ARD, Inc., at Tullahoma, in rocket testing.

He joined Union Carbide again in 1966 in the Product Engineering Department at Y-12, and in 1971 was named supervisor of the Standards



Roger L. Davis

and Surveys Department, a post he held until his recent promotion.

Mrs. Davis is the former Patricia Sumner, and the couple lives in the Gulf Park sub-division in Knoxville. They have two children, Kirk and Paige.

Davis is a licensed professional engineer.

Y-12 Maintenance promotes six



Blalock



Daugherty



Fulbright



Halburnt



Parker



Rogers

The Maintenance Division in Y-12 has announced the promotion of six foremen. They are Michael S. Blalock, Wendell C. Daugherty, Walter K. Fulbright, Jack J. Halburnt, Charles E. Parker, and James F. Rogers.

Blalock, a native of Ducktown, served in the U.S. Navy before joining Union Carbide in 1969.

He and his wife, the former Vonnie Trull, live at 132 South Seneca Road, Oak Ridge. They have two children, Michael and Kenneth.

Daugherty was born in Norma, and attended the Tennessee Institute of Electronics. He was self-employed and worked in construction in all three Nuclear Division plants before joining Union Carbide six years ago.

He and his wife, the former Marjorie Blank, live at Route 3, Norwood Drive, Oliver Springs. They have a daughter, Angela.

Fulbright, a native of Parma, Mo., attended Flat River Junior College there and Cape Girardeau State College. He worked as an electrician for Ozark Ore Company and served in the U.S. Navy before joining Union Carbide more than 23 years ago.

Mrs. Fulbright is the former Mary Moorman, and the couple lives at Route 3, Lenoir City. They have a son, Stephen; and two daughters, Valerie and Hazel.

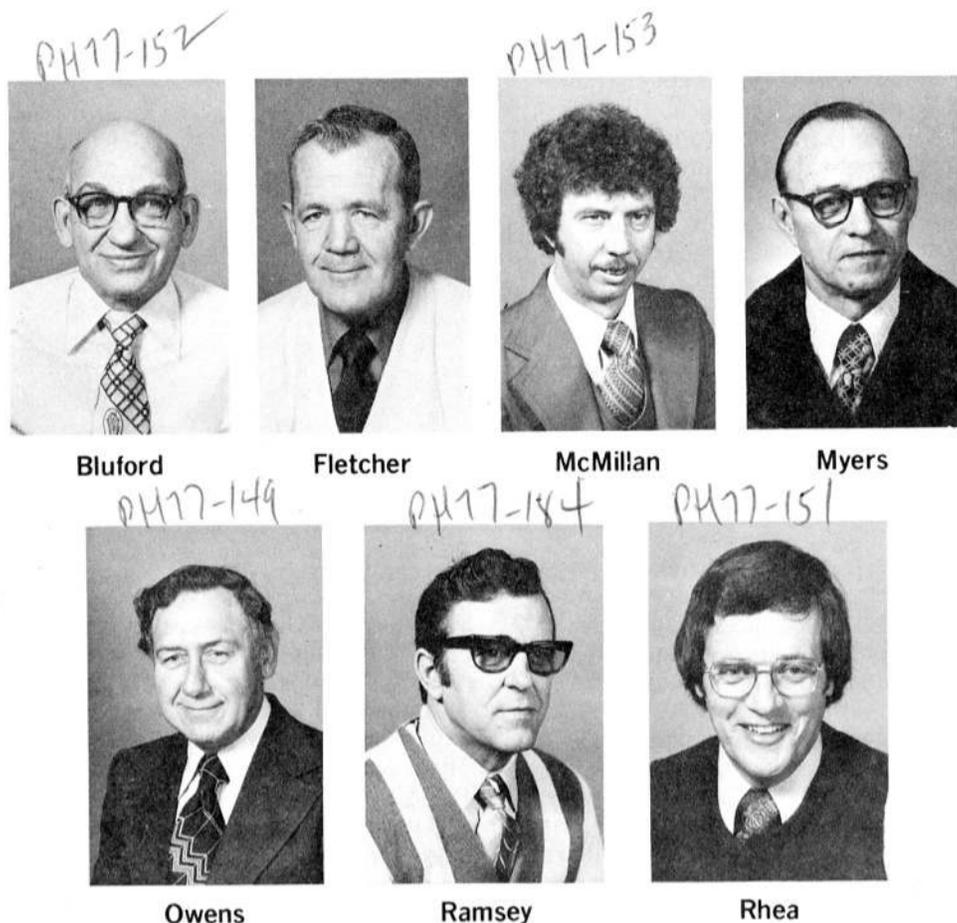
Halburnt, a native of Albertsville, Ala., attended the University of Tennessee, and worked at Boeing and Aerojet before joining Union Carbide 11 years ago. He is a veteran of the U.S. Air Force.

He lives at Route 5, Clinton. He has two daughters, Laura and Kathleen.

Parker, a native of Maryville, has been at Y-12 more than six years. He

(Please see page 8)

New ORGDP supervisors named



Seven new supervisors have been named at ORGDP. James E. Bluford, Ray M. Myers, and James L. Ramsey are in Fabrication and Maintenance; James D. Fletcher and Leon A. Owens are in Technical Services; and Ralph L. McMillan and Ronnie J. Rhea are in Separation Systems.

Bluford, a native of Greenback, joined Union Carbide in 1974, after serving 21 years in the U.S. Air Force and working with the Maremont Corporation.

He and his wife, Margaret, live at Route 1, Lenoir City. They have two sons, David and Mike.

Fletcher, who was born in Nickelsville, Va., has attended night classes at the University of Tennessee. He has been at ORGDP 24 years, and worked for the Holston Ordnance Works prior to that.

He and his wife, Leonora (who works in the Accounts Payable Department) live at 107 Morris Lane, Oak Ridge. They have two sons, Joseph and David.

McMillan, a native of Athens, grew up in Oak Ridge, and holds a B.S. degree in industrial technology from Tennessee Technological University. He has been at ORGDP six years.

He and his wife, the former Betty Mattox, live at 154 Valley Drive Road, Oliver Springs. They have two children, Michael and Michelle.

Myers was born in LaFollette, and his first job was in construction in the early days of Oak Ridge. He served two years in the U.S. Army and worked at various jobs in Detroit

before returning to this area. He worked in Y-12 two and one-half years, and has been at ORGDP since May of last year. He attended the Lincoln Extension University and the Radio, Electronics and Television School.

Mrs. Myers is the former Beey Smith, and the couple lives on Sunset Lane, Indian River Village, LaFollette. They have two married daughters, Linda Oliver and Susan Richardson; and Melissa, Diana and Ray at home.

Owens was born in Casey, Ill., and worked in farming and construction before joining ORGDP 31 years ago. He also served in the U.S. Navy.

Mrs. Owens is the former Imogene Fearow, and they live at Route 3, Gallaher Road, Kingston. They have two sons, Richard and Jim.

Ramsey was born in Charleston, W. Va., and worked 21 years with the Chemicals and Plastics Division there, before coming to ORGDP last year.

He and his wife, Lois, live at 150 Athens Road, Oak Ridge. They have a son, James and two daughters, Debra Patterson and Kathy Ferrell.

Rhea, a native of Kingsport, spent most of his life in Oak Ridge. He holds a B.S. degree in industrial management from UT and transferred to ORGDP in 1975. He worked six years as a process operator in Y-12 and is a veteran of the U.S. Air Force.

Mrs. Rhea is the former Mary Chilton, and they live at 14 Newcastle Lane, Oak Ridge. They have two children, Heather and Lindsey.

Biomedical school receives grant for cellular research

The University of Tennessee-Oak Ridge Graduate School of Biomedical Sciences has been awarded a grant of over \$360,000 from the National Institute of General Medical Sciences of the National Institutes of Health (Department of Health, Education and Welfare) to be used over a five-year period to support predoctoral student training in macromolecular research in biological regulatory mechanisms.

The Biomedical School is an integral part of the Graduate School of the University of Tennessee, Knoxville, and is operated in conjunction with the ORNL Biology Division.

Robin A. Wallace, an ORNL biologist and program director for the training grant, said the funding will provide stipends, tuition, fees and research expenses for two students in fiscal year 1978 and 10 students a year in each of the next four fiscal years.



Wallace

Wallace said: "The focus of study is the cell, which is the smallest unit of organized matter exhibiting all those activities that, collectively, distinguish living matter from non-living matter. The processes with which cells are

engaged are incredibly varied and range from numerous synthetic functions to activities such as secretion, movement and self-reproduction through division.

"We will be concerned with how these various cellular processes are regulated and integrated by such macromolecules as nucleic acids and proteins. Because the subject matter is very broad, training necessarily will involve multidisciplinary instruction and research. The school, through its affiliation with Biology Division, represents a broad spectrum of disciplines in cellular and molecular biology, and is uniquely qualified to present an integrated program for training students to conduct research in this area."

Daniel Billen, director of the Biomedical Graduate School, said he was particularly pleased to receive the award because it was achieved in spite of intense competition from similar training programs at colleges and universities throughout the nation.

Billen pointed out that over 40 students have graduated with Ph.D. degrees from the school since it began operation in 1966. These graduates have continued their research at university, medical and research institutions throughout the United States and other countries.

retirements



Ferd S. Stroupe
Y-12 Chemical Services
28 years service



Everett H. Ashton
Y-12 Quality Evaluation
22 years service



Clyde R. Sellers
Laboratory Protection,
ORNL
30 years service



Evan W. Means
Y-12 Maintenance
29 years service



Rufus A. Moore
Y-12 Chemical Services
31 years service



John R. Jones Sr.
Instrumentation and
Controls, ORNL
32 years service



Winnie P. Human
ORGDP Separation
Systems
25 years service



Charles B. Gaither
Operations, ORNL
32 years service



Ernest Edwards
Y-12 Maintenance
31 years service



George I. Cathers
Chemical Technology,
ORNL
24 years service



Sherman T. Crisp
Y-12 Machine Maintenance
21 years service

Also:
James A. Harris
Laboratory Protection, ORNL
32 years service

Clarence Hood
Plant and Equipment, ORNL
24 years service

safety scoreboard

Time worked without a lost-time accident through January 27:

Paducah	121 Days	1,446,000 Man-Hours
ORGDP	24 Days	790,000 Man-Hours
Y-12 Plant	50 Days	1,318,000 Man-Hours
ORNL	133 Days	2,650,309 Man-Hours

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.

Salary increase

QUESTION: What was the average annual percentage salary increase given to Y-12 monthly employees during calendar 1976? What percentage increase, and at what time intervals, is planned for 1977 for the employee rated as "competent" and now at 94 percent of the mid-point of his salary range? How does Carbide rationalize the lower percentage increases given to monthly personnel in 1976 when the union employees have received nine percent?

ANSWER: We do not publish the annual percentage salary increase given to employees at an installation, nor do we publish the time intervals and percentage increases anticipated for the coming year. If you have a question about your own salary, discuss it with your supervisor.

Concerning the speculation in your last sentence, we have answered this type question at least on two occasions during the past year and quote below the latest answer, which appeared in the August 19, 1976, issue of the **Nuclear Division News**:

"Union Carbide salaried employees receive increases in salary based on the job level, their position in the rate range, and their performance. The increases received by employees are varied in percentage and not, as you state, five percent and six percent based on a 16-month period. Some employees are receiving more than nine percent; others are receiving less. Our salary rates compare favorably with TVA's and with rates paid by other large employers in the area and are significantly higher than others in Oak Ridge and Knoxville."

Employees leaving early

QUESTION: "A nonexempt employee who arrives late or leaves work early will lose payment for time not worked unless he is excused by his supervisor for a justifiable reason. The time approved is shown on the Time Distribution Card." This is a quote from the Nuclear Division Office Guide. My question: Do all the people leaving from 4 p.m. until 4:27 p.m. have permission to do so? And, does all this go on their time card with pay?

ANSWER: Without your being more specific regarding employees leaving between 4 p.m. and 4:27 p.m., it is impossible to give you a meaningful response to your question.

However, it is company policy that all nonexempt employees have all scheduled work time accounted for. Our timekeeping system provides a wide variety of specific expense symbols which reflect the approved reason for any time absent from the scheduled hours. Some of these types of absences qualify for pay while others do not.

Another firewood cutting set in area

And faith we shall need it! Public firewood cuttings have been added for Friday and Saturday, February 11, 12. Permits are \$5, and additional information may be obtained from Dennis Bradburn, extension 3-1266.



SLOGAN WINNER—Betty Rogers, Paducah Plant's Cascade Operations Division, is shown accepting her award for a slogan she submitted recently in the division-wide contest. George T. Hull, division superintendent, makes the presentation; as Waldo W. Evans, originator of the contest, looks on from the right.



Nuclear Division engineers reduced the electrical energy requirements of ORNL's 25-year-old Building 1000, above, through conservation measures, resulting in annual savings of nearly \$24,000. No major modifications or equipment costs were involved in the demonstration at the building, a two-story frame structure with wooden walls and uninsulated floors; and occupants have experienced little or no change in comfort or working efficiency.

Energy requirements reduced in 25-year-old frame structure

Nuclear Division engineers have reduced the electrical energy requirements of a typical 25-year-old frame office structure by nearly 65 percent through conservation measures that have little or no effect on the comfort or working efficiency of the occupants.

Changes in the levels and hours of operation of lighting, ventilation, and heating and cooling systems have reduced electricity use by more than 1.5 million kilowatt hours per year—and resulted in estimated annual savings of nearly \$24,000. The energy savings will increase annually as the cost of electricity continues to grow.

No major alterations

No major building modifications or equipment costs were involved. The conservation demonstration has taken place in Building 1000 at ORNL. The two-story building has wooden walls and floors with no insulation, and it has a flat roof with three inches of blown wool insulation in the ceiling.

The results are believed to be applicable to a large number of office buildings, schools, and other structures that are in use principally on eight-hour-a-day, five-day-a-week schedules, reducing lighting levels, modified ventilation schedule, equipment shut down, additional floor insulation, storm windows, reset of inside temperatures, and daylight savings time—both from April to October, and year-round.

Lighting reduced

Except for carpeting and storm windows, all of the strategies analyzed in the study have been implemented in the building. Cost of the required modifications, estimated at \$2,000, was limited to the removal of light bulbs and the installation of timers on the exhaust fans.

Lighting, which accounted for about 50 percent of the building's total energy usage, was reduced significantly by simply turning off lights in unoccupied offices and removing un-

needed bulbs. These two lighting modifications resulted in the biggest energy savings of all—\$8,400 and \$4,100 per year, respectively.

Energy savings

Mechanical ventilation systems were shut down during unoccupied periods, running only from 7 a.m. to 5 p.m. on weekdays. Automatic timers were installed to operate building exhaust fans on the schedule described. The result was energy savings of about \$4,000 per year.

Heating and air conditioning equipment was shut down during unoccupied times, resulting in energy savings of \$7,300 a year. In the summer the offices were a bit stuffy in the mornings, but were not uncomfortable. During the winter temperatures decreased, but were reestablished to a comfortable level once heaters were turned on.

Only a modest decrease in energy usage was recorded as a result of setting temperatures at the recommended levels—78°F in summer and 68°F in winter.

The study was conducted by Engineering Division staff members Ernest E. Choat, James H. Corley, Thomas C. Fisher and Julian M. Morrison, as part of the continuing effort to conserve energy under guidelines established by the Energy Research and Development Administration.

JOIN CAR POOL ORNL

VAN POOL RIDERS WANTED from Beaver Creek Drive, Karns-Solway area, any portal, 8 a.m. to 4:30 p.m. Gary Wright, plant extension 3-6441, home Knoxville 947-0241.

next issue . . .

The next issue will be dated February 17. The deadline is February 9.

recreationotes



FIGHTING FEDS—Although the Feds' record shows a 6-win, 33-loss tally, they are always in there scrapping their way across the volleyball nets. They brighten the Nuclear League in the Volleyball crowd. The Feds, from left, are Carolyn Chamberlain, Russ Overby, Harold Ketterer, John Clarke, John White, Phil Edmonds and Gail Culton.

ORGDP bowling ...

Mary Johnson paced the ORGDP Women's League recently with a 242 single scratch game ... a 653 handicap series, as Oleta Carden rolled a 560 scratch series, beating Sue Davis's 211 single game, 633 handicap series prior to that one. The Pay-offs hold a slight lead in standings.

J.L. Hengstler paced his Eight Balls team recently in the Tuesday League, with a 582 scratch series, boosted to a 657 handicap total! The All Steers lead the league, eight points ahead of the City Slickers.

The Planners grabbed an early lead in the Wednesday League, as second half action got into gear recently. Gene Epps posted a 257 single/656 Series to make his Losers team look good.

Y-12 bowling ...

The Sunflowers, Anodes, and DLM Used Cars are tied for leads in the C League, as Lonzie Patterson's high single of 246 and series of 697 looked good on a snowy eve in January.

The Splinters took the Classic League's first half, a full six in front of the Ridgers and Has Beens. Eddie Edwards' 729 series, and Billy Sise's single of 282 warmed the alleys up.

The Friskies got the crown for the first half in the Y-12 Mixed League, consisting of the Bob Foresmans and Bill Hacketts. An early lead was assumed by the Hits & Misses as the second half got into competition. Mabel Tyer rolled a 518 series ... revved up to a 668 handicap tally in mid-January.

ORNL bowling ...

The Pin Heads jumped to an early lead in the C League recently pulling away from the Alley Rads and Cellar Dwellers. Harold Albee, Be-Bops, put a 655 series up in lights.

The Mousechasers, who won the season's first half, grabbed an early lead in the ORNL Women's League, as Mary Long rolled a 203 scratch game and Laura Walker posted a 639 handicap series.

In the A League it's the Limits by a point and a half over the Recycles. The Dynamics' Hawkins rolled a 657 series to pace his team in mid-January.

Volleyball leagues ...

Competition tightens in the three Volleyball Leagues as sportsmen fight the weather.

League standings follow:

NUCLEAR LEAGUE		
TEAM	WON	LOST
Blue Team	33	9
The Skinks	30	9
Over-The-Hill Gang	28	11
Radd-Fizz	30	12
Pogo's	26	13
Artie's Army	24	15
Maxwell Demons	19	20
C-Shift Reds	15	24
Ball Busters	17	25
Fed's	6	33
The Kilos	5	31
The Abends	7	35

ATOMIC LEAGUE		
TEAM	WON	LOST
Taxi Squad	30	6
Diggers No. 2	28	11
Diggers No. 1	27	12
Quarks	15	21
Ecomen	8	31
Old Men	6	33

ORNL fishing rodeo ...

Laboratory fishermen and women brought trophy-type fish in as the 1976 last half contest closed. Winners may get their awards at Room 113, Building 2518.

Winners were:

Largemouth bass	
Paul W. Reinhardt	9 lbs. 2 ozs.
L. L. Anderson	3 lbs. 13 ozs.
Smallmouth bass	
Tom Stephens Jr.	5 lbs. 12 ozs.
L. A. Howard	5 lbs.
R. I. VanHook	4 lbs. 12 ozs.
Striped bass	
J. P. Heiskell	3 lbs. 12 ozs.
Herb Johnson	3 lbs. 7 ozs.
J. L. Moore	
(daughter Rhonda)	2 lbs. 8 ozs.
Bream (bluegill)	
R. I. Santoro	
(daughter Lori)	8 lbs. 9 1/2 oz. *
Roscoe H. Jones	
(wife Micheline)	3 lbs. 9 1/2 oz.
Roscoe Jones	8 lbs. 9 oz.
*Girth larger than Jones' catch.	
Crappie	
J. T. Walker	1 lb. 10 ozs.
Robert K. Holmes	
(son Robert M.)	1 lb. 9 * ozs.
Hybrid/rock	
Dennis E. Sproles	15 lbs.
T. E. Lowery	13 lbs. 8 ozs.
Rough fish	
Charles Stanley	19 lbs. 8 ozs.
David Cattrell	14 lbs. 12 ozs.
Sauger	
E. J. Witkowski	3 lbs. 11 ozs.
William Martin	3 lbs. 1 oz.
S. O. Smith	2 lbs. 15 ozs.
Trout	
W. G. House Sr.	4 lbs.
T. H. Gilliam	3 lbs. 1 oz.
Walleye	
Charles L. Thompson	5 lbs.
Muskie	
Arnold Beets	22 lbs. 12 ozs.

Cold weather energy-saver

Lower thermostats to 68 degrees during the day and 60 degrees at night. If these settings reduce the temperature an average of six degrees, heating costs should run about 15 percent less.

If every household in the United States lowered heating temperatures six degrees, the demand for fuel would drop by more than 570,000 barrels of oil per day (enough to heat over nine million homes during the winter season).

CARBON LEAGUE

Gauss House Gang	24	6
Volares	24	9
Group	13	17
Half A Chance	11	22
Killer Bees	6	24

wanted



Y-12 PLANT

Join CAR POOL from South Harriman to Central Portal, 8:15 a.m.-4:45 p.m. shift. Charles Loggins, plant phone 3-7272, home phone Harriman 882-1801.

Join or form CAR POOL from East Wolf Valley Road, South Clinton, to Central Portal, straight day. R. A. Daniels, plant phone 3-5233, home phone Clinton 457-4478.

RIDE WANTED or will JOIN CAR POOL from North Knoxville, Oglewood Avenue in the vicinity of St. Mary's Hospital, to West Portal, "J" shift. F. L. Alexander, plant phone 3-5388, home 523-6081.

TWO CAR POOL members from Lenoir City to Biology Portal, straight day. Leroy Ellis, plant phone 3-7417, home phone Lenoir City 986-7465.

JOIN CAR POOL from Lenoir City area, Dixie Highway East, to Y-12 Biology Portal, straight day. Marshall Loring, plant phone 3-5458; home phone 986-2754.

VAN POOL RIDERS from Maryville to East and North Portals, straight day. Daryl Coppenger, plant phone 3-5963, home phone Maryville 983-5939.

CAR POOL members from Lenoir City to North or Biology Portal, straight day shift. Leroy Ellis, plant phone 3-7417, home phone Lenoir City 986-7465.

ORGDP

RIDE WANTED or will JOIN CAR POOL from Ball Camp Pike, Knoxville, to Portal 4, "C" shift. J. S. Thompson, plant extension 3-9679.

RIDE from Ft. Sanders area, Knoxville, to Portal 2, 7:45 to 4:15 shift. John Milloway, plant phone 3-1851, home phone Knoxville 524-5778.

JOIN van pool from Oak Ridge to ORGDP, straight day. Oak Ridge telephone 482-3649.

ORNL

RIDE NEEDED from Powell area to North Portal, 8 a.m. to 4:30 p.m. Pam Carroll, plant phone 3-0386, home phone 947-0191.

CAR POOL members from Woodland area, Oak Ridge, to East Portal, either shift. Mary Combs, plant phone 3-6731, home phone 483-0909.

JOIN CAR POOL from West Outer area, Pennsylvania and Hillside, to ORNL East Portal, 8:15 to 4:30 shift. Thomas Burnett, plant phone 3-6936; home phone 483-1975.



DUCKHUNTERS — Duck and geese hunting has become a popular sport around the Paducah area. Here part of the 30 brave souls that registered for a recent cooooooold hunt line up for last minute chit-chat.



medicine chest

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.)

QUESTION: "I have received several calls asking for information on what special examinations should be performed on people who, as children, received radiation treatment to the head or neck. A recent TV program on the increased risk of thyroid cancer in such people has apparently generated much apprehension."

ANSWER: An increased risk of cancer of the thyroid in individuals who received X-ray or radium therapy for benign conditions during infancy or childhood has been known for over 20 years. Because of this knowledge, radiation therapy for most non-malignant conditions was discontinued many years ago.

Cancer, when it rarely occurs, may take 5 to 35 or more years to develop. Because of destruction of records, systematic recall for examination of every adult who received radiation therapy in the 1940's or 1950's is impossible. Most hospital records are not kept more than 10 years.

Several medical centers in Chicago, Pittsburgh and the Mayo Clinic who had retained their records have been able to call back a large number of people for examination. In a study of 1,056 irradiated individuals at Michael Reese Hospital in Chicago, 27 percent were found to have thyroid nodules, and approximately 20 cancers were found. The reason for the "approximately" is that after abnormalities were found, some people went other places for care and complete follow-up was not possible.

The age-adjusted thyroid cancer rate in the USA for all ages, races and sexes is about 3.7 per 100,000 population per year. It is therefore a relatively rare cancer. The incidence in adults having received therapeutic radiation as children is much higher than in nonirradiated children. Obviously, the risk is greatest in those whose thyroids received the most radiation. Some skin treatments of the face or scalp did not cause great exposure to the thyroid.

Common in '30s and '40s

Radiation therapy was considered good medical practice in the 1930's and 1940's and even in the early 1950's in children who had enlarged tonsils and adenoids not easily correctable by surgery and various skin diseases such as acne and ringworm of the scalp. Infants with an enlarged thymus which interfered with

breathing were often irradiated. Children who had severe and recurrent middle ear infections, due to enlargement of lymph glands around the opening of the eustachian tube in the throat, often improved dramatically following radiation therapy.

People who are quick to condemn physicians for using radiation therapy for benign conditions must remember that knowledge of radiation effects was primitive at that time. Alternative forms of therapy were not available. A child whose tonsils and adenoids had been removed, but still had chronic draining ear infections which threatened to destroy hearing, had to be treated the only way available. Antibiotics didn't come into wide use until after World War II. Adequate alternative means for treating severe acne and ringworm of the scalp have only been available the past 15-20 years.

Recently, Judge David Canel of the Illinois Circuit Court dismissed the first of about 40 malpractice suits against Michael Reese Hospital, saying that at the time it was done, X-ray therapy was the accepted medical practice.

Individuals who remember being irradiated in their head or neck as children, or whose parents can remember such treatment, should have a careful physical examination every two years, with special attention to palpation of the thyroid gland. When possible, the amount of radiation previously received should be determined. These examinations should be continued indefinitely. If no nodules are palpated, nothing further is mandatory.

Routine scan not advised

A special workshop was convened by the National Cancer Institute and the Bureau of Radiological Health of the Food and Drug Administration in September 1975 to determine appropriate follow-up studies. The results were published in the May-June 1976 issue of *Ca—A Cancer Journal for Clinicians*. There was not unanimous agreement, but performing a routine thyroid scan on everyone using either radioiodine or radiothelnetium was not recommended. Those who recommended it one time on individuals with no palpable nodules did not recommend periodic repeat scans.

When a nodule is palpated, a scan using ^{99m}Tc-thelnetium perthelnetate is preferred, since it delivers only about

Savings Plan—Personal Investment Account

Recent unit values:

	Fixed Income Fund	UCC Stock	Equity Investment Fund
August 73	10.0000	34.7688	10.0000
December 73	10.2444	31.8170	9.3602
December 74	11.0438	40.3009	6.4354
December 75	11.9880	58.7886	7.8231
October 76	12.8706	60.0703	8.5837
November 76	12.9621	57.6422	8.4938
December 76	13.0554	59.2723	8.8167

Note: Fixed Income Fund unit values reflect interest additions to achieve the guaranteed effective annual interest rate of 8.85% for 1976. Union Carbide stock values are the average cost of stock purchases during the month plus brokerage charges. Equity Investment Fund unit values represent the month-end market value of securities held by the Fund. Dividing the total value by the number of units in the fund establishes the month's unit values—and the price at which new units are added that month.

anniversaries

ORGDP

30 YEARS

Mark H. Davis, Computer Applications; Walter A. Bogdanowicz, Engineering Division; Clarence D. Hawkins, Computer Sciences; and Harry E. Smith, Machine Shop Department.

25 YEARS

Ralph P. Lukat, Albert H. Malone, James D. Sweeney, Lonnie M. Fussell, James T. White, Charles L. Jackson and Billie E. Martin.

20 YEARS

Robert A. Jago, Robert C. Hopkins, Elsa G. McCarthy and Mary M. Keebler.

0.1 rad to the thyroid. A ¹³¹I iodine scan may deliver 100-200 rads while ¹²³I iodine delivers about 3 rads. Unfortunately the ¹²³I iodine is not available in many locations. Technetium may show a nodule to be "hot" (takes up more of the radioisotope than normal tissue) which is not "hot" when radioiodine is used, therefore scans need to be interpreted by experts. "Real" hot nodules are of little significance.

If the scan shows a nodule to be "cold" (takes up less radioisotope than the surrounding tissue), the thyroid gland should be surgically explored. Up to 27 percent of "cold" nodules are malignant. When a nodule is neither "hot" nor "cold," the patient may be given thyroid hormone for six months to see if the nodule decreases in size. If it does not, it should be removed. Some experts will place patients with a documented radiation exposure to the thyroid on suppressive doses of thyroid hormone. They believe this may prevent the development of nodules. These patients need to be followed annually.

The palpation of the gland can be done by any physician who is experienced in palpating thyroid glands. Scans can be performed by nuclear medicine departments in most large hospitals.

Cancers of the thyroid related to previous radiation therapy grow slowly and metastasize (spread to distant locations) late and are, therefore, usually curable by surgery. Those people at increased risk because of childhood radiation therapy should, nevertheless, be followed carefully.

Y-12 PLANT

25 YEARS

Bill I. Leinart, Harold L. Woodard, Bruce F. Hayes Jr., Sebron S. Coleman, Earl T. Taylor, Billy R. Disney, Arthur J. Hines, Talmadge C. Hudson, Willie P. Crouse, Norman J. Roberts and Lillian F. Williams. John F. Stephens (December 29).

20 YEARS

Lloyd S. Sheffield and Alvin L. Austin.

PADUCAH

25 YEARS

Bobby J. Bond, Charles E. Featherston, William D. Gresham, Austin F. Oliver, Fred M. Buckley, Charles R. Baker, Russell C. Quertermous, Gordon W. Hughes, Morris N. Wright, Billy G. Childress, Charles D. Lindsey and Melvin S. Barks.

ORNL

30 YEARS

Charles D. Cagle, Operations Division; George C. Warlick Jr., Finance and Materials Division; Robert E. Alexander, Laboratory Protection Division; Harry H. Nichol, Plant and Equipment; Gene T. Connor, Laboratory Protection Division; Ruth Slusher, Computer Sciences Division; and Eugene F. Roy, Plant and Equipment Division.

25 YEARS

John W. Fritz William A. Lindsey, Isao K. Namba, James L. Botts, Robert L. Shepard, Bryce Philpot, James T. Cox, Andrew C. Smith, Lloyd L. Hall and Charles R. Starlin.

20 YEARS

Martha M. Larsen, Joseph J. Prisliger, Maurice H. Kunselman, Edena K. Thirloway, Rosemary S. Lockyer and Edward Sonder.

Y-12 Credit Union

The annual meeting for the Y-12 Credit Union has been postponed to February 10, at 7 p.m. at the Oak Ridge Civic Center. The January meeting was cancelled due to the lack of heat and inclement weather.

The doors will open at 6 p.m. for registration. Cash will be given away as a door prize, plus the grand prize of a microwave oven. There will be entertainment, plus the usual order or business.

Union Carbide income up 15 percent in 1976; 70c dividend declared

Based on preliminary figures, Union Carbide's 1976 net income amounted to \$441 million, or \$7.15 a share, 15 percent higher than 1975's income. Sales were \$6.35 billion, the highest in the corporation's history, 12 percent higher than that reported in 1975.

Fourth quarter net income was \$105 million, 30 percent higher than for the same period in 1975.

The board of directors declared a 70c quarterly dividend for the fourth quarter, compared to 62.5c for the third quarter last year. This is the 239th consecutive dividend paid to stockholders.

1977's annual meeting has been set for March 8 in Houston.



INDUSTRIAL HYGIENE MEETING—A four-plant meeting was held recently in Paducah to develop ideas and formulate plans to implement Union Carbide's priority policy of employee health and safety preservation. Chairing the session was Bob Jordan, Nuclear Division Manager of Health, Safety and Environmental Control. Participating industrial hygienists include Charles Turok, Paducah; Newell Bolton and James E. Ealy, ORNL; Bill Everett and Jerry Lambdin, Y-12; and Bob Gilmore, ORGDP.

division deaths

Two ORGDP employees died in an automobile accident January 21.

Kathleen M. Davis, a clerk in the Microfilm Department of the Finance and Materials Division, joined Union



Carbide in 1972. She lived at 143 Alger Road, Oak Ridge.

Survivors include her husband, Carter L. Davis, Y-12 Plant Records; daughters, Linda Cantrell, Shirley Seymour and Katherine Smith; two grandchildren; a brother, James E. Mayo; and her father, Ed Mayo.

Mrs. Davis

Services were held January 24 at Martin Funeral Chapel with burial in Tennessee Valley Memory Gardens.

Mattie W. Long, a native of Chattanooga, was in Technical Services. She joined Union Carbide in 1974 after working with ERDA in Oak Ridge.



She is survived by her husband, P. Rudolph Long, an employee in ORNL's Plant and Equipment Division; children, Raylene and Anthony Long; and parents, Mr. and Mrs. Andy C. Witt.

Mrs. Long

The Long home was at 2501 Brooks Road, Knoxville.

Services were held January 24 at the Logan Temple AME Zion Church, with burial in Holly Hills Memorial Park.

Maintenance promotions

(Continued from page 3)

was a quality assurance technician at Collins Radio Company in Dallas, has attended UT and the Tennessee Institute of Electronics.

Mrs. Parker is the former Judy Jackson, and they live at 2229 Highland Road, Maryville. They have two daughters, Tammy and Melissa; and a son, Charles.

Rogers, a native of Juno, Tenn., served 20 years in the U.S. Navy, most

William D. Powell, a material planner in the Maintenance Division at ORGDP, died January 17 in a Nashville Hospital.



Mr. Powell

Mr. Powell, a native of Colquitt, Ga., had worked at ORGDP since 1945. The Powell home is at 103 Principia Lane, Oak Ridge.

He is survived by his wife, Edith Cooper Powell; sons, William and Gary Powell; daughter, Cheryl Sandoz; brother, Fred Powell; sisters, Mrs. Fred B. Hilty, Mrs. Horace Tabb and Mrs. Alene Leake; and one grandchild.

Services were held at the Weatherford Chapel with interment in the Oak Ridge Memorial Park.

Jay L. Ledgerwood, an inspection engineer in the Products Certification Division in Y-12, died at his Oak Ridge home January 18. A native of Halls Cross Roads, he was a graduate of the University of Tennessee, and joined Union Carbide in 1951. (He had worked previously in Y-12 for Tennessee Eastman Corporation.)



Mr. Ledgerwood

He is survived by his wife, Catherine Cannon Ledgerwood, 110 East Tennessee Avenue, Oak Ridge; daughters, Kay Dearing and Sue Foster; sons, Mickle, William and Timothy Ledgerwood; a brother, John S. Ledgerwood; and two grandchildren.

Services were held at Martin Funeral Home, with burial in Oak Ridge Memorial Park. The family has asked that any memorials be in the form of gifts to the donor's favorite charity.

of that time in nuclear submarine service. He joined Union Carbide in 1967, and is a graduate of Draughtons Business College.

He and his wife, the former Trevor Lane, live at 125 Killarney Road, Knoxville. They have two sons, Donald and James; and a daughter, Pamela.

Off-the-job record is poor

(Continued from page 1)

when it happens on the job. With the threat of the worst winter in history (which, incidentally, is only half over this week), driving to and from work becomes an especially risky chore. Snow and ice-driving is altogether different from driving under ideal conditions. Special techniques, equipment and a great deal of fortitude are combined to overcome the hazards of winter driving.

A two-car accident has already claimed the lives of two employees this year.

Off-the-job safety requires the same thought, the same planning and the same precautionary measures that at-work practices demand. Until we take our safe attitudes home with us, apply those standards to our daily lives, and avoid unsafe practices in our outside activities, our away-from-work standards will not improve.

A concerted effort will be made throughout the Nuclear Division during 1977 to improve our safety performance on-the-job, and particularly away from work.



CORRECTION

The six engineers at left were incorrectly identified in the last issue of the **Nuclear Division News**. They recently received licenses as Professional Engineers in the state of Kentucky, and are: H. Dale Bewley, Jerry W. Carter, Mark T. Curtis, David M. Massey, Earl Richardson and Paul D. Wright.



UNION CARBIDE CORPORATION

NUCLEAR DIVISION

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