



# NUCLEAR DIVISION NEWS

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

Vol. 5 - No. 1

January 5, 1974

## QUESTION BOX

**QUESTION:** I have two questions regarding the planned "trade" of SDO's at ORGDP (Monday, December 31, instead of Saturday, January 5).

1. Since the change affects most employees at the plant, why weren't the weekly and monthly employees given a chance to express their preference? To my knowledge, only the union members were given that consideration.

2. If such a trade is desirable, why wasn't it announced sooner? Those employees who had the foresight to plan their vacation to include the 31st are now left with an additional day of vacation after most plans have been made. In addition, those of us who have already made plans for January 5 will be forced to either cancel them or take a day from our 1974 vacation allotment.

Although I understand the purpose of the trade, I feel that management erred in announcing it at such a late date.

**ANSWER:** The trade, which was made in the day of work this week at the Oak Ridge facilities is proving to be popular. It resulted from requests which came at about the same time from some of our salaried employees as well as from some of our unions. Energy conservation played a part in the revised schedule since it was not necessary to heat working areas for one day of work and then reheat the same areas a day later following the holiday. We recognized that the change in schedule would inconvenience some employees. We agree it would have been better if the decision and the announcement concerning the change in the work schedule had been made earlier.

**QUESTION:** Most of the Union Carbide personnel recognize the importance of the United Fund drive. Most of us, also, are active in community and church activities and contribute through these. Each of us has to balance our contributions and to give according to where we place emphasis. This past year there was much criticism that UCC-ND management placed too much emphasis on the United Fund drive and, in some cases, used coercion to achieve fair-share giving

or high percentage participation. In other cases, it was inferred by supervision that failure to participate in the drive and the amount of contribution would be considered during evaluation for salary increases and advancements. Most employees feel that this is extremely unfair and want to know the real feeling of management toward "high-pressure salesmanship" as it relates to the United Fund drive.

(NOTE: Similar questions concerning this subject are not being printed because of space limitations. It is felt that this answer covers the situation, however.)

**ANSWER:** United Carbide believes in the United Way since it is the best way for all of us to support the numerous worthwhile agencies it represents; therefore, we support it and encourage our employees to support it. This results in a fairly sophisticated drive. There usually are meetings with employees and, in most cases, individual contacts are made during the course of the campaign. Despite our support and encouragement, we do not want to pressure employees into giving fair share or high percentage contributions. Each employee should decide for himself his own degree of support to the United Way. An employee may give at whatever level he decides, or may not give at all, without this action having any effect on his job status or any matter relating to it, such as pay or advancement.

**QUESTION:** The Affirmative Action Program was supposed to be designed for minority groups. Please give the total number of representatives in this broken down into groups: monthly, weekly, hourly, women, men, negroes, caucasians, etc.

Also, in the \_\_\_\_\_ Division the representative is \_\_\_\_\_. I would not go to him with a problem for fear of "cutting my own throat." It seems to me that most divisions are represented by a man on the monthly payroll, who could

(Continued on page 8)

The QUESTION BOX has proven to be quite popular and as a result we receive more questions than we can answer quickly. It is our practice to answer questions involving a timely subject as soon as possible (for example, the one in today's column about the December 31 workweek schedule).

Routine questions with no particular time reference are answered generally in about the order in which they are received. In view of the time lag involved, don't be disturbed if your question is not answered immediately. The normal delay at this time is about two-three months.

## Herman Postma appointed ORNL director, January 1

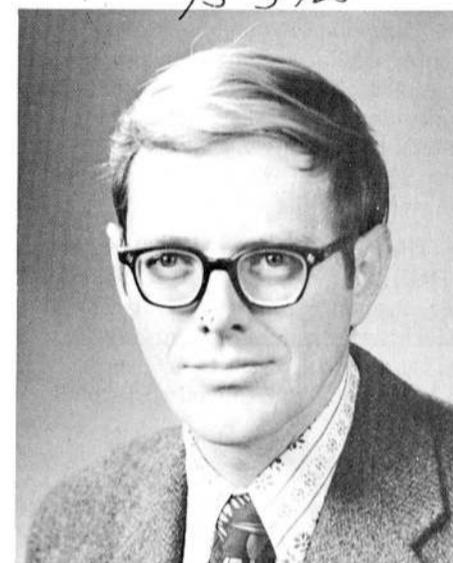
The appointment of Herman Postma as Director of the Oak Ridge National Laboratory, effective January 1, has been announced by Roger F. Hibbs, President of the Nuclear Division. Postma succeeds Alvin M. Weinberg, Laboratory Director since 1955. Weinberg has been named as the Director of The Institute of Energy Analysis to be formed by the Oak Ridge Associated Universities under its contract with the Atomic Energy Commission.

Floyd L. Culler, who has been serving as Acting Director of the Laboratory during Weinberg's leave of absence since February, 1973, will assume his previous responsibilities as Deputy Director.

Postma, who has been Director of the Thermonuclear Division at ORNL, joined the Nuclear Division in 1959 as a physicist studying the properties of plasmas and their instabilities. In 1963 he spent a year as a visiting scientist at the FOM-Instituut voor Plasma Fysica in The Netherlands.

### Interests listed

Postma was named associate director of the Thermonuclear Division in 1966, and was appointed Division Director the following year. In this position he has directed research in controlled fusion;



Herman Postma

experimental plasma physics; theoretical plasma physics; atomic, ionic and molecular beams; high energy phenomena; high vacuum research; engineering; and fusion feasibility studies.

He has been a member of the Atomic Energy Commission's Committee on Plasma Physics Research. He also is a member

(Continued on page 8)

## "Uniquely rewarding years"

The following is a statement from Alvin M. Weinberg concerning his retiring as Director of Oak Ridge National Laboratory:

"I am retiring as Director of the Oak Ridge National Laboratory to become Director of the newly established Institute for Energy Analysis. The Institute will be concerned with analysis of technical and social problems of energy, and



Weinberg

will provide advice to government officials responsible for formulating and implementing energy policy.

"At this time, I wish particularly to thank Floyd Culler who as Acting Director has carried the heavy burdens of the past year with such poise and good sense. All of us owe Floyd a debt of gratitude that we can never adequately repay.

"To the Laboratory's new Director, Herman Postma, I offer my best wishes for continued success. I trust that each member of the ORNL staff will give to him the same support and dedication that I have enjoyed during the past 25 years.

"These years have been uniquely rewarding ones for me. I have been uncommonly blessed to have had the opportunity of seeing nuclear fission develop from a scientific experiment into a major source of energy. All of us at ORNL must take pride in the share we have played in bringing this miracle to pass.

"Above all, I want to thank all of you who have made the Oak Ridge National Laboratory a place of great distinction in basic and applied research, and who have supported me so unstintingly during all these years. For the future, I can only wish each of you the greatest success and personal fulfillment."

### Next Issue

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

# High flux isotope reactor completes 100th fuel cycle

The High Flux Isotope Reactor at Oak Ridge National Laboratory reached a milestone last month by completing its 100th fuel cycle of operation. A fuel cycle is the lifetime of a fuel assembly and usually lasts about 23 days.

The HFIR is a research reactor built primarily to produce transplutonium elements. It first began operation in 1965, and criticality was reached that same year.

### Reactor design

The reactor utilizes a flux-trap fuel assembly designed specifically to produce an intense flux of neutrons at a thermal power level of 100,000 kilowatts. The fuel assembly is composed of two concentric cylindrical fuel elements containing plates of 93 percent-enriched uranium-aluminum cermet. Each new fuel assembly contains 9.4 kilograms of uranium-235, about 31 percent of which is burned up during a fuel cycle.

The Transuranium Processing Plant (TRU), located adjacent to HFIR, utilizes the reactor to irradiate target rods from which transuranium elements are separated and purified. TRU is operated by personnel of the Chemical Technology Division.

### Transuranium elements

The transuranium elements produced in the HFIR thus far are: 500 grams of americium-243 plus curium-244; 100 milligrams of berkelium-249; 1 gram californium-252; 5 milligrams of einsteinium-253; 3 picograms of fermium-257.

The HFIR has also played an important role in the basic research programs of the Chemistry and Solid State Divisions at ORNL. The reactor provides the most intense thermal neutron beams currently available. Many neutron scattering experiments performed by members of the staff have provided important scientific information on the physical properties of materials that could not have been obtained elsewhere.

### Neutron scattering facilities

Completely automatic computer-controlled neutron scattering facilities have been installed at the horizontal beam ports of the reactor. These facilities are designed to provide maximum flex-

ibility in a wide variety of experiments, and are used almost continuously during the operating cycles of the reactor.

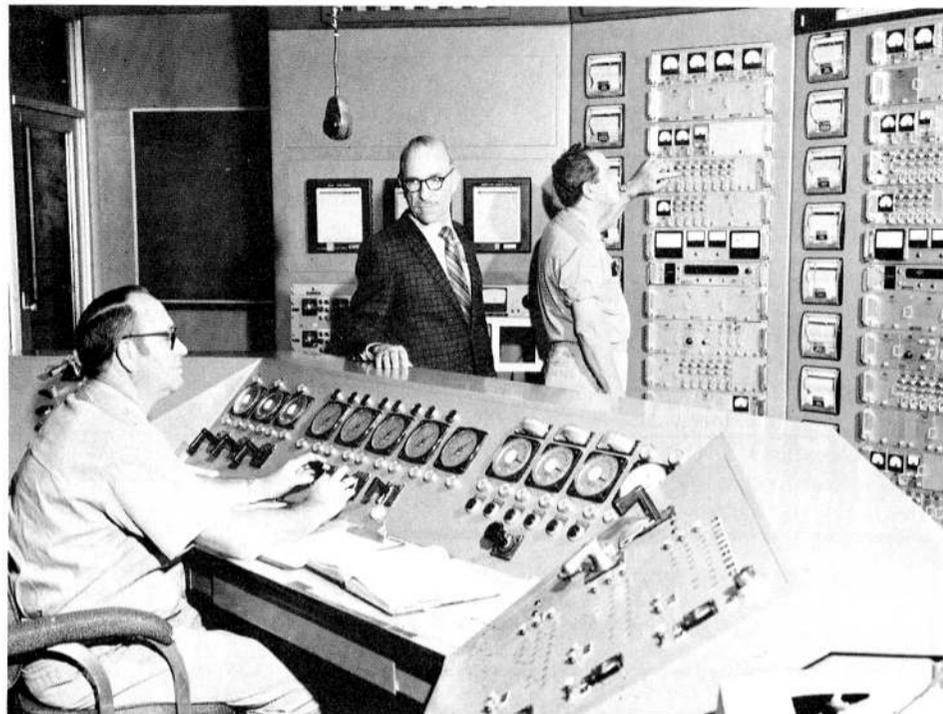
Moreover, two of the facilities involve new neutron scattering techniques developed by ORNL scientists, which are used to obtain data on solid-state phenomena that could not be obtained by the more conventional methods.

Many requests are received from scientists at universities and other laboratories to use these facilities. Requests are accommodated, when possible, for cooperative research with scientists at ORNL.

### Highest on-stream time

In addition to completing its 100th fuel cycle, the HFIR, this year, is experiencing its highest percentage on-stream time of about 94 percent. The thermal neutron flux and the percentage on-stream time of the HFIR are the highest of any research reactor in the world.

The Operations Division is in charge of operation of the HFIR.



HFIR CONTROL ROOM — Rube V. McCord (center), reactor supervisor at the HFIR, checks to see if everything is under control. Ted Welch, seated, and Doug Harris, right, are reactor operators.

## Industrial Cooperation Bulletins tell latest Nuclear Division technologies

Several innovative ideas and new techniques are described in the most recent series of Industrial Cooperation Bulletins mailed recently to industries throughout the nation. Issuance of the bulletins is part of the industrial cooperation effort of the Nuclear Division.

Each bulletin describes a specific item, reports on the stage of development, the potential industrial application and patent status. In addition, each bulletin gives the name of the person from whom additional information can be obtained.

The current group of Industrial Cooperation Bulletins covers items such as:

- \*A comprehensive report on residential consumption of electricity which should prove useful to municipal utility districts, and those who are working to provide for future power needs.
- \*An air quality indexing system that provides efficient and meaningful information to interested municipalities, scientists, policy makers, or the general public.
- \*An efficient process for removing radioiodine from fuel processing plant

off-gases.  
\*A bellows-forming apparatus which permits the manufacturing of a bellows with uniform wall thickness.

\*An eddy-current seam-tracking apparatus for use in making high-precision welds with electron beam welders.

\*A new reversed-phased chromatography packing useful in applications requiring high-resolution ion-exchange chromatography, such as in the preparation of biological samples, chemicals manufacturing and hydrometallurgical separations.

\*A thermal flow-rate monitor for metallic powder.

\*A real-time radiograph correlation analysis system.

The Industrial Cooperation Bulletins are issued on a quarterly basis. Persons interested in obtaining copies of the bulletins, or additional information on specific items, can do so by contacting: Mr. Austin Read, Union Carbide Corporation, Nuclear Division, P. O. Box Y, Oak Ridge, Tenn. 37830.

### NUCLEAR DIVISION NEWS

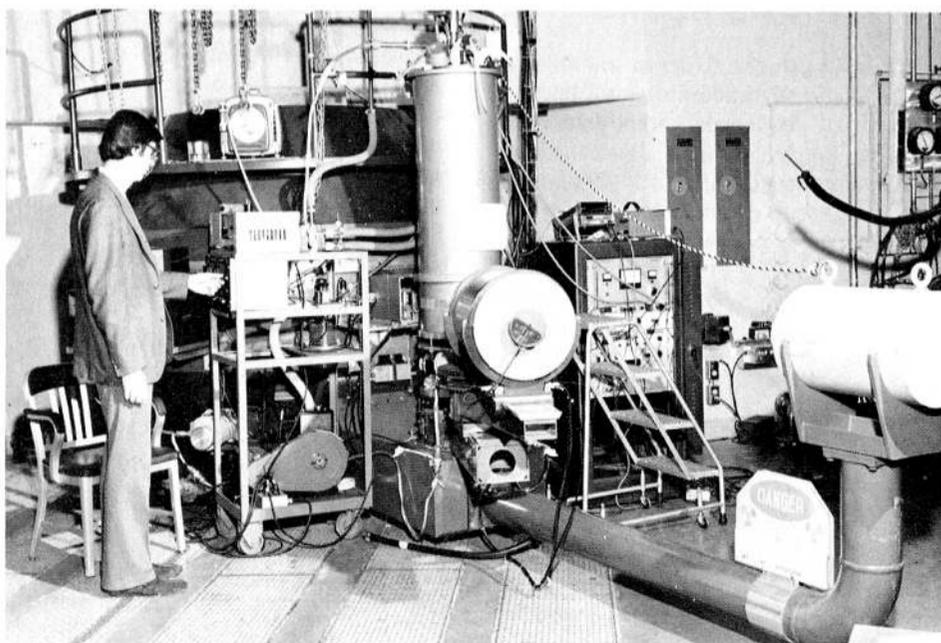


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HB-1 — Herbert Mook, Solid State Division, examines equipment in one of the experimental beam areas of the High Flux Isotope Reactor. The reactor provides the most intense thermal neutron beams currently available.



OVER THE TOP — The Paducah Gaseous Diffusion Plant has pledged more than \$41,000 to the United Appeal drive, recently completed. This is an increase of more than 10 percent over last year's record-breaking contribution. United Appeal funds go to agencies in Ballard, Graves and McCracken Counties in Kentucky, Massac County in Illinois and Mississippi County in Missouri. From left are John K. Phipps, co-chairman; Gene Rollins; Clyde C. Hopkins, Plant Superintendent; A. Saylor; Eurie W. Smith, co-chairman; B. N. Stiller; W. D. Sullivan; Lester Easterday; Ray Elliott and Virgil Raines.

# Factors that influence fuel conservation in automobiles

By Eric Hirst

A few weeks ago in this column, we talked about the transportation sector and its uses of energy. Here we focus on the automobile because of its dominant position in providing passenger transportation and in consuming petroleum. Almost 90 percent of total urban and intercity passenger traffic in the United States is carried by car. The price for this considerable traffic — a trillion vehicle-miles a year — includes 70 billion gallons of gasoline. This gasoline equals a third of our total petroleum use and 14 percent of the national energy budget. With present and projected oil shortages, it is essential that we examine the auto in terms of its energy saving potential.

First we'll look at design factors that influence fuel economy. These are the items to consider when we purchase new cars — weight, engine type, horsepower, transmission, accessories, body shape, tire design, suspension system, rear-axle ratio and emission control devices. Fortunately, only some of these are important in determining fuel economy.

### Vehicle weight important

The most important factor is vehicle weight. The figure below gives fuel consumption per mile for different cars tested by Consumers Union. Note the nearly straight-line relationship between fuel consumption and weight. The conclusion is clear: the heavier your car, the more fuel you will use!

Cars with automatic transmissions use about 10 percent more fuel than cars with standard transmissions. Overdrive — remember overdrive? — would save additional fuel because it would allow the engine to operate more slowly at highway speeds.

Air conditioning decreases fuel economy by at least 10 percent when in use. On an annual basis, air conditioning cuts fuel economy by about 3 percent.

### Size of engine

Large engines use more fuel than do small engines. For example, a 10 percent increase in engine size cuts fuel economy by 3-5 percent. Also, people with high-powered cars may drive with a heavy foot and this also increases fuel use.

Let's look at two very different, but widely used, cars to see how they differ in fuel economy. Start with a typical "big three" sedan. This car weighs 4,200 pounds, has a 350-cubic-inch engine, and is equipped with automatic transmission, air conditioning and power steering. Average fuel economy is less than 12 miles per gallon (mpg).

### From big car to subcompact

What happens if we cut vehicle weight to 2,400 pounds? Replace the transmission with a four-speed manual transmission? Junk the air conditioner and power steering? Replace the large V-8

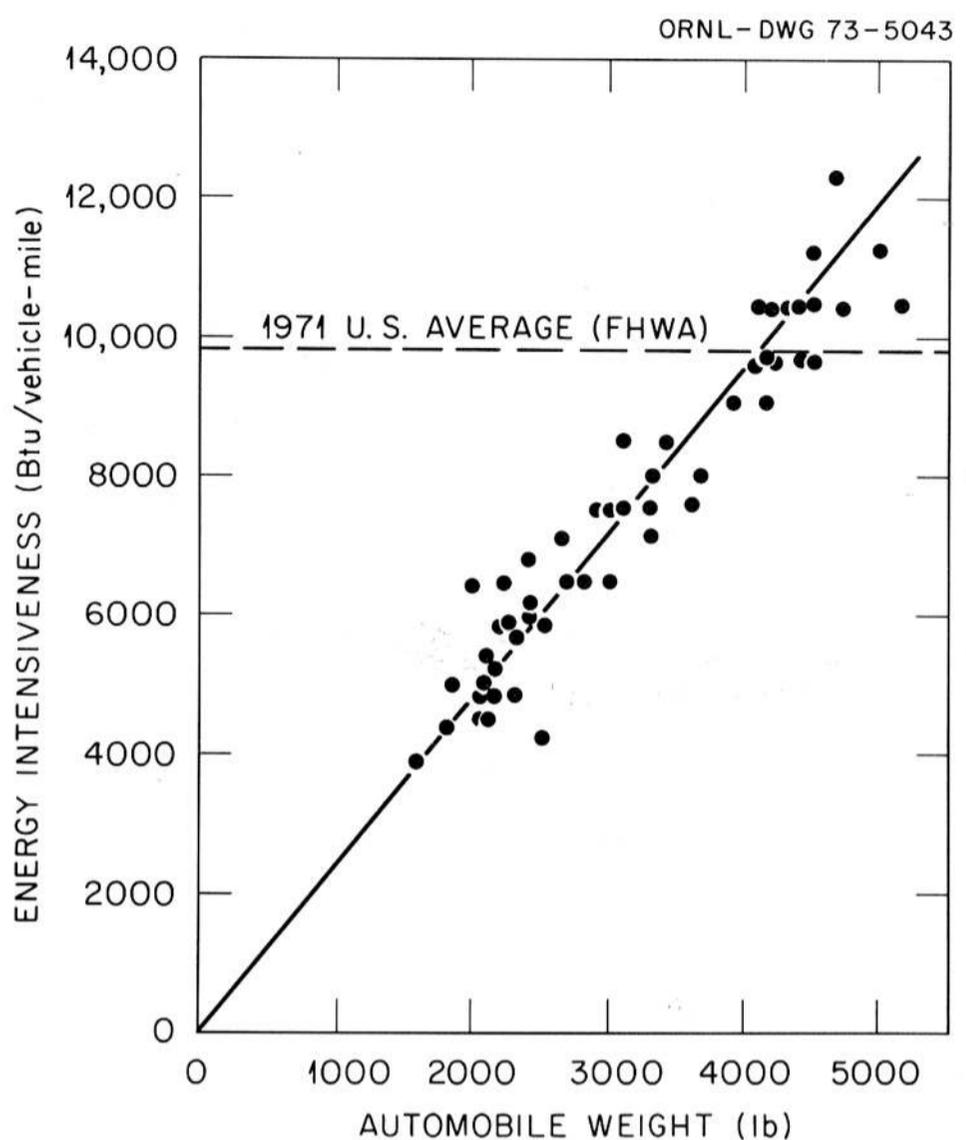
engine with a small 4-cylinder engine? What happens is that we go from a big car to a subcompact. In making these changes we sharply improve fuel economy — from less than 12 mpg to almost 20 mpg — a 65 percent increase.

Emission control systems also affect fuel economy. According to recent tests conducted by the U.S. Environmental Protection Agency (EPA), the average fuel penalty for 1973 model cars due to pollution control is 10 percent. Thus, fuel costs for clean air are equivalent to those for an automatic transmission. Cast in that light, emission control costs don't seem high. The EPA tests also show that the fuel penalty for emission control increases significantly with vehicle weight: lighter cars show no fuel penalty, while cars that weigh 4,000 pounds or more show fuel penalties of 15 percent or so. This provides another incentive to purchase small cars.

### Drive at steady speed

So much for new cars. What can we do with our present cars? Eliminating jack-rabbit starts could save five percent of our urban driving fuel bill. Driving along the Turnpike at a steady 35 mph (to eliminate stops) uses 20 percent less gas than driving at 45 mph and stopping at every light. Slower speeds on the Interstates would also save fuel. The table shows that driving at 50 mph rather than at 70 uses 22 percent less fuel.

As gasoline prices continue to rise — and they surely will — and as rationing becomes more likely, we'll become more conscious of the fuel impacts of our cars. So maybe we ought to reread this article before turning the page.



GRAPH — Automobile fuel consumption as a function of vehicle weight for 1971 and 1972 model cars. This graph masks the effects of other determinants of fuel economy such as automatic transmissions and horsepower-to-weight ratios.



### ORGDP

RIDE or will join carpool from Michigan Avenue, Maple Lane area, Oak Ridge to Portal 2, straight day. B. H. Bates, plant phone 3-3057, home phone Oak Ridge 483-1279.

RIDE from Luttrell's Texaco or Melton Hill Truck Shop, on Highway 95 to Portal 2, 7:45 to 4:15 shift. J. R. Rutter, plant phone 3-3157, home phone Lenoir City 983-3154.

### ORNL

RIDE from Hunter Circle - Hillside Drive area, Oak Ridge, to East Portal, 8 or 8:15 a.m. shift. Sylvester Cook, home telephone, 482-4563, or plant phone 3-1525 or 3-1943. Willing to share gas expenses.

### Y-12 PLANT

RIDE from Edgemore Road, Amoco Station vicinity, to any portal, straight day. Glen Miller, plant phone 3-5886, home phone Claxton 945-2560.



VOWS SOLEMNIZED — Katherine Lynn McGill and Jonathon M. Simmons were married in Oak Ridge recently. The bride is the daughter of T. M. McGill, an ORNL retiree; and the bridegroom's father is Walter Simmons, a supervisor in the maintenance department at Y-12. The couple is residing in Barnswell, S.C.

## "Fueling" around

Up On Coal - Dig Out of the Energy Hole

Oh Coal 'O Mio  
Try 68 degrees - You'll Like It  
Save a Gallon a Day - Keep Rationing Away

We live in an age when unnecessary things are our only necessities.

A motorist is a person who, after seeing an accident, drives slowly for the next five minutes.

### STEADY SPEED FUEL ECONOMY

Speed (mph)	Fuel Economy	
	Actual (mpg)	As a percent of mpg at 40 mph
40	21.5	100
50	19.2	89
60	17.2	80
70	14.9	69

### FORMER ORNL EMPLOYEES DIE

George W. Reed, who retired from the Plant and Equipment Division at ORNL in 1959, died November 29, 1973. Mr. Reed's family resides at 210 East Fourth Avenue, Lenoir City.

George F. Cox died in Knoxville December 19, 1973. Mr. Cox worked in the Plant and Equipment Division for over 17 years, before taking retirement in 1970.

# Quality assurance concepts - applied at home and at work

By Karl Johnsson

As you have seen from various signs and posters around the plants and probably heard in various department meetings, we are involved in an intensified quality assurance program. Perhaps some of you do not really understand what is meant by quality assurance.

The term is relatively new, but the concept is an old one that most of us have used in everyday living all our lives. It is a plan or program to do everything possible to be sure that things work out the way we want them to. Let us consider how quality assurance applies to some of the steps involved in baking a cake and compare these to the ones in making, say, a converter for one of the gaseous diffusion plants.

## MAKING A CAKE

### NEED



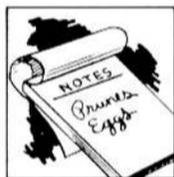
The Jones family is coming over for dinner Thursday night, and we need something special for dessert. They like prune cake, but since the bakery doesn't carry them, I'll have to make one.

### PLAN



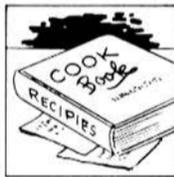
Prune cake is rich enough itself; so we don't need any icing but will just put a little glaze on it. With just the glaze, it would look nice cooked in the Bundt pan.

### INGREDIENTS



I have the flour, sugar, baking powder, spices, and milk but need some eggs and the prunes. I'll send Tommy to the store, but he had better go to Williams Market since I know their eggs are fresh.

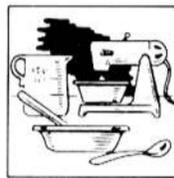
### DIRECTIONS



I'll use Mrs. Lawson's recipe out of the church cookbook. I know it works and is clear and easy to follow. I'll have to cut the baking time about ten minutes,

though, since the Bundt pan cooks things faster.

### EQUIPMENT



Let's see, bowls, spoons, measuring cups, mixer, and of course the cake pan and the oven. The oven is in good shape now since we had the thermostat fixed. (That almost-burned loaf of bread last month was enough to let me know that the oven needed attention.)

### MIXING

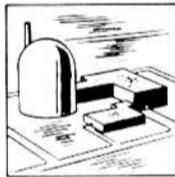


One step at a time will do it. I do have to plan ahead, though, since the prunes have to soak overnight. A good recipe certainly makes it easy.

## MAKING A CONVERTER

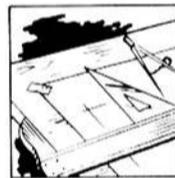
### NEED

To keep our country going we need more energy. Aside from the present crisis, our fossil fuels will run out in a few hundred years, and we must look to other sources for energy. Nuclear energy appears to be the best solution at present, but to use it we need more enriched uranium, which requires more capacity with equipment such as converters.



### DESIGN

Engineering has the basic design that has been successful in the past, but they need to include the improvements that the development people have proven will improve the efficiency another 10%.



### MATERIALS

Purchasing will order the needed materials according to the specifications. A check will have to be made to see that the vendor is doing the job right and we will not lose a lot of time rejecting defective material. Also, Receiving will inspect everything upon arrival.



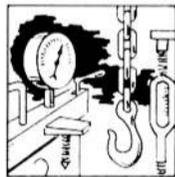
### PROCEDURES

The Engineering Job Procedure covers all the steps in assembling the converter. The new procedure is not much different from the one we used years ago, but it does take into account the changes required due to the revised design.



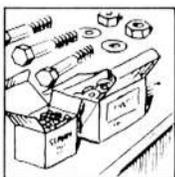
### EQUIPMENT

The needed equipment is all on hand. The new jigs and fixtures needed for these units have all been fabricated for the new design. Inspection has checked the gages, so we know that they are right. It's good that the slings have been load-tested, since we have to pick up some heavy loads.

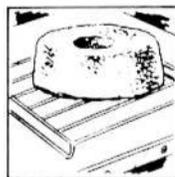


### FABRICATION

No problem. Just follow the procedure one step at a time. The listing of what nuts and bolts are needed saves a lot of trips to the stockroom for supplies.



### INSPECTION



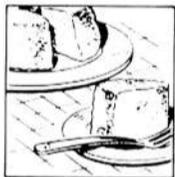
Well, it is out of the oven and cool. Looks good - didn't fall the way that pound cake did. I'll pinch a bit off the bottom to taste it before the glaze goes on.

### INSPECTION

It's all together now, and the inspector is almost finished. So far everything is within tolerances, and it is sure to finish that way, since this job was really planned.



### EATING



The dinner was a complete success. Mrs. Jones even asked for the cake recipe, and she is such a good cook that she is not ordinarily interested in new recipes.

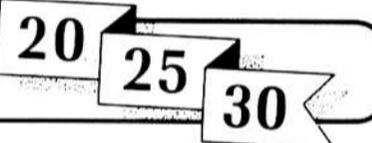
### USING

Operations is using the new converter, and everything is going fine. The new design meets all expectations, and production will increase. Quality assurance does pay off.



These are the kinds of things that quality assurance is all about. It is not just the inspection of parts or the analysis of raw materials, but it includes the planning and the implementation of all the steps involved in a job. The existence of plans and procedures is not enough, because quality assurance includes the everyday use of the procedures in all areas of work and a means for keeping management informed that the plan is being followed.

## COMPANY Service



### 30 YEARS ORNL



Mrs. Lowe

### Y-12 PLANT 30 YEARS



Dalton

Sue F. Lowe attained 30 years of company service in December. Mrs. Lowe, a native of Chattanooga, worked at TVA before joining the Tennessee Eastman Company in 1943. She has two daughters and eight grandchildren. She and her husband, Claude, reside at Route 1, Ford Road, Lenoir City.

Clyde E. Dalton, Y-12's electrical and electronics department, celebrated his 30th anniversary December 17. He and his family live at 21 Laurel Place, Norris.

George J. Fisher, Willie C. Schuiten, Raymond D. Hulen, Raymond W. Stoughton and George F. Leichsenring.

Coy L. McGinnis, James M. Dixon, James E. Keeton and Forrest N. Case.

Lorenzo D. Brown, Harold M. Payne, Cecil C. Butler, Joe H. Hackney, Harold D. Duncan, Raymond E. Mellon, Rella O. Davis, Homer F. Jenkins, Harry M. Montgomery, Henry Jones, Leonard R. Bledsoe, Thomas H. Miller, Forrest E. Clark, Elizabeth Patrick, George W. Mitchel, James F. Baker and Jacob F. Manne-schmidt.

### 25 YEARS

Mack E. Lackey, Louis Wickham, Sidney Katz, Carl E. Lawson and William J. Martin.

### 25 YEARS

Herbert A. Miller, James W. Gregory, Thomas G. Pappas, Martha P. McKinstry and Dorothy M. Tompkins.

### 20 YEARS

Ralph E. Dial, Morris F. Osborne, Howard E. Cochran, Ruth N. Hengstler, Lola M. Kyte, Jessie Inman, William T. Henry Jr., Robert L. Brown, Hugh M. Long and Stanley W. Denny.

John A. Conlin Jr., William H. Cook, W. Mel Collins, Kenneth S. Belitz, Charles E. Smith, Charles M. Ferguson and Hobert B. Thomas.

### 20 YEARS

Dave S. Tipton Jr., Fred H. Wray, George E. Duncan, James W. Kyle, Sherley H. Franks, Howard W. Roberts, J. T. Taylor, Willie F. Miller, Herman R. Parks, Charlie Bullock Jr., Clarence F. Needham Jr., Chester Powers, Leevie C. Vann, Nolan Parrott, Otis R. Garmon, William P. Smith, Phillip J. Bertin, James L. Garner, Cleois Cross, Hubert V. Tripp, William T. Chapman, Grady G. Norton, William S. Helms, Charles H. Slaton and James M. Richmond.

### PADUCAH 30 YEARS

Ernest W. Evans and John L. Clark.

### GENERAL STAFF 30 YEARS

20 YEARS  
Eurie W. Smith Jr., and Chester M. Hall Jr.

Kenneth W. Bahler, George W. Flack and Edwin B. Carter Jr.

## Savings bonds go to Y-12ers in third safety award drawing

The Y-12 Plant recently conducted its third incentive award plan drawing for awards for the 90 days without a lost-time accident which ended December 9.

Winning \$500 Savings Bonds were Sallie Jansch, ceramics and plastics development department; Michael J. Moore, electrical and electronics department; Paul P. Febbo, Engineering Division; Dana L. Lassater, industrial relations administration; Lyle G. Overholser, Development Division; Job Goodwin Jr., production assay; August T. Sharp and Ronnie E. Scott, both in general shops.

Others winning, by division, were:

**Superintendents:** Cleo Sideris.

**Metal Preparation:** Andrew J. Smith, Gregory S. Harvey, Jack M. Jones, Everett L. Braden, William R. Noe, Max L. Stanton, James H. Gibson Jr., Ruby K. Jones, Donnie L. Jones, Mary W. Cooper, Lester D. Hayes, Edward W. Murray, Byrl P. Adkisson, William T. Horton, William L. Gaston, Wayne D. Howard, Sammie C. West, Vaughn E. Chase, Harvey L. Sullivan Jr., and Iva H. Jones.

**Biology:** Diane G. Schmidt, Beverly G. Stanford, Henry E. Luippold, Eddie L. Jones, Richard A. Griesemer, Edna M. Garrison, William C. Kyker, Melvin P. Stulberg and William L. Carrier.

**Fabrication:** Horace D. Prichard, Harrison F. Spiers, Donald E. Parkus, Henry L. Hamilton, Myron E. Bagwell, Joseph M. Arden, J.A. Williams, Alonzo A. Curtiss, Wiley B. Redmon, Billy D. Cantrell, Larry W. Melham, Ernest L. Puch, Willie F. Ragsdale, Ery M. Spencer, Eugene E. Worsham, Leroy A. Taylor, Noel K. Newton, Carl H. Dorr and Richard E. Dew.

**Maintenance:** Danny W. Richards, James E. Blair, Woodrow Jackson, Bobby D. Reed, Chester L. Johnson, John Blackburn, Edward L. Farrie, Paul Abner, Thomas C. Harmon, Claude H. Laughlin, Dallas W. Viles, Edward F. Tuell, Pauline B. Morris, Hubert V. Tripp, William A. Petty, Walter O. Magill and Roy D. Tate.

Charles C. King, Bill Tackett, Floyd W. Kyte, Eugene E. Mauney, Milton Settle,

James P. Powers, Elgin H. Bass, Bruce H. Drinnen Jr., Lawrence E. Graham, Wilbur N. Proffitt, Wayne J. Johnson, Thorton S. Hinshaw, Lawrence E. Hardwick and J. C. Haskins.

**Thermonuclear:** William J. Schill and Enyeart C. Crume Jr.

**Product Engineering & Scheduling:** Doris S. Sartelle, Trygve C. Myhre, Daniel D. Keith, Earl D. Seagle, D. C. Morrison, Richard C. Wright Jr., Cletus A. Rinderer, Ralph G. Babb and James W. Young.

**Engineering:** Jimmy D. West, Paul B. Burri, Werner Offhaus, Joyce G. Conner, Thomas P. Wicker Jr., Jerald E. Insell, Don A. Keith, Paul A. Williams, Sandra J. Jackson, Marschall N. Ward, Charles E. Muzzall and Don E. Troutman.

**Shift Superintendents and Utilities:** Jimmy R. Giles, Edwin E. Spradlen, Bart L. Godfrey, Hilton A. Tunnell and T. J. Bush.

**Industrial Relations and General Staff:** Walter A. Armstrong, Barbara S. Wilson, Barbara M. Roberts and Patricia C. Weaver.

**Isotopes:** Ruth J. Curl, Dennis Bridges and William C. Davis.

**Development:** James E. Miner, James M. Cunningham, Roy L. Huddleston, Richard E. Neal and Teresa C. Lamons.

**Assembly:** Cecil Houser, Charlie E. Walker, Carroll W. Campbell, Denny M. Nabors, Larry R. Chambers and Brenda N. Price.

**Technical Services:** Jerry M. Beeler, Andrew Denny, Lyndal E. Miller and Johnnie C. Jordan Jr.

**Product Certification:** Sherman L. Jenkins, Keys D. Balling, George D. Manley, Paul P. Overton and Mary G. Davis.

**Materials and Services:** Lovetta G. Thomas, Billy G. Easter, Clem Jones, Thomas E. Hillard and John P. Kennedy.

**Reactor:** Grady D. Whitman, Bill H. Montgomery and Bill L. Greenstreet.

**Miscellaneous (ORNL):** Raymond L. Walker.

## Adkins named lab technician at ORGDP; Mrs. Bullock will head mail services

Two recent promotions are announced at the Oak Ridge Gaseous Diffusion Plant. Billy H. Adkins has been named a laboratory technician in the Separations Division, and Virginia H. Bullock has been made supervisor of mail service in the Finance and Materials Division.

Adkins, a native of Draffin, Ky., attended Eastern Kentucky State University and the R.E.T.S. Electronics School, Detroit.

He and his wife, the former Carol J. Clowers, live at Route 3, Norwood Drive, Oliver Springs. They have three children, Cindy, Suzanne and Gregory. Adkins enjoys fishing, camping and playing basketball.

Mrs. Bullock, a native of the Wheat area, came to ORGDP in 1951. She is a graduate of Oliver Springs High School.

She lives on Sugar Grove Valley Road, west of the ORGDP complex. She has a married daughter, Diane Edwards, and a granddaughter. Mrs. Bullock enjoys sports and most outdoor activities.



Mrs. Bullock

Adkins

## Calendar of EVENTS

### TECHNICAL

January 7

Mathematics Research Seminar: "Linearized Equation of Water Waves in Time-Dependent Domains," Brian R. Lau, University of Utah, East Auditorium, Building 4500N, 9 a.m.

January 9

Chemical Technology Division Seminar: "Studies on the Chemical and Colloidal Nature of Pu IV Polymer," M. H. Lloyd, Central Auditorium, Building 4500N, 3 p.m.

January 10

Gas-Cooled Reactor Programs Bimonthly Information Meeting: "Initiation of HTGR Structural Materials Research at ORNL," P. L. Rittenhouse; "Postirradiation Evaluation of HTGR Fuel Rods in HRB-4 and HRB-5 Capsules," E. L. Long Jr.; and "Evaluation of <sup>14</sup>C Problems in HTGR Fuel Reprocessing," J. W. Snider, East Auditorium, Building 4500N, 9 a.m.

### COMMUNITY

January 11-12

Oak Ridge Playhouse presents: "The Effect of Gamma Rays on Man-in-the-Moon Marigolds." Playhouse, 8:20 p.m. Other performances January 18, 19, 25 and 26.

## Cost accounting topic of two-day conference

Fifty people representing Union Carbide Corporation, U.S. Atomic Energy Commission, Goodyear Atomic Corporation, and E. I. du Pont de Nemours Co., attended a two-day conference on cost accounting standards November 29 and 30, 1973, at Oak Ridge Associated Universities. The conference was conducted by Jack Paul, Federal Procurement Conferences, Inc., Los Angeles, Calif.

The conference dealt with cost accounting standards and regulations recently promulgated by the newly created Cost Accounting Standards Board. The CASB was created by Public Law 91-379 relating to national defense procurements of \$100,000 or more. Approximately 40 of the attendees were Oak Ridge employees, and about 10 were from Ohio, South Carolina, and Delaware AEC installations.

One purpose of Public Law 91-379 is to create more uniformity and consistency in the way companies estimate and account for the costs of producing materials and equipment under most negotiated defense contracts.

## Paducah NSA presented "power of powder puff"

The Mayfield Chapter of the National Secretaries Association, International, recently presented a seminar entitled "The Power of the Powder Puff." Mrs. Genevieve Warren of the Fabrication and Maintenance Division, presented the program.

Management views were presented by E.M. Gilliam, Plant Manager of South Central Bell; D.W. Sparks, Superintendent of the Mayfield School System; and V.H. Crowder, Vice-President and General Manager of the Merit Clothing Company.

Secretarial views were presented by chapter members Mrs. Norman Ivy, General Tire and Rubber Co.; Mrs. Laverne Haygood, Court Report of the 53rd District; and Mrs. Doris Sims, secretary at the Western Kentucky RECC.

Miss Sandra Stinson, International Business Machines, spoke on "Word Processing," and Mrs. Shirley Williamson, Director of Pupil Personnel Services for the Paducah public schools, concluded the meeting with her presentation of "Everyone Needs to be Somebody."

### ORGDP CREDIT UNION MEETING

The Oak Ridge Gaseous Diffusion Plant's Employees Federal Credit Union will hold its annual meeting on January 28, at the Oil, Chemical and Atomic Workers Union Hall in Oak Ridge.

Details concerning the order of business and door prizes will appear in the next issue of the NEWS.

### THE LAST WORD

Double ignorance is where a man is ignorant of his ignorance.

Plato

Who strives to build after every opinion, will have a house unfit to live in.

Finkell

In life as in cards, the glory is not so much in the winning as in playing a poor hand well.

Billings



**SPORTS INJURY?** — Because sports injuries account for a number of off-the-job injuries for company employees, Y-12 Plant's Assembly Division made this problem the theme of a skit for a recent monthly safety meeting. The division has established a reputation for its original and entertaining safety programs. Taking part in the performance were, in foreground, Dr. Gino Zanolli and "injured player" Marlene Prater; looking on, cheerleader John Landry, players Leah Lefevers and Linda Marlar and coach J. D. Robertson.



UNION CARBIDE CHRISTMAS PARTIES, OAK RIDGE, DECEMBER 22

# The Medicine Chest

(Editor's Note: Dr. Lincoln alternates his regular column with "The Medicine Chest," where he answers questions from employees concerning their 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, or call the news editor in your plant, and give him your question on the telephone.)

By T. A. Lincoln, M.D.

**QUESTION:** "My father has several medical problems and he takes many different pills at various times each day. I worry he is going to get confused and take either too many or too few. What general advice can you give?"

**ANSWER:** On numerous occasions I have seen patients returning to work following a major illness who had no knowledge of the medicines they were taking. They would produce a small box containing many different pills and would say, for example, that they "take one of the brown pills twice a day, one of the red pills three times a day, and one of the yellow capsules before bed time." Often they did not know what the name of the medicine was or what it was for. Under such circumstances mistakes in dosage could easily occur. Remember, however, that these were alert middle-aged people still working. Consider the problem when the patients are 80 or more years old and easily confused.

Dr. M. R. P. Hall, professor of geriatric medicine at Southampton General Hospital in England, recently offered several suggestions to physicians prescribing for the elderly which can be adopted for use by geriatric patients or their relatives. I have added several of my own ideas to his list.

1. If possible get written instructions from your physician.
2. Have your physician write LABEL on all prescriptions and then have his instructions based on the name of the medicine. By having each medicine labeled you and your father can learn its name and associate it with the dose schedule.
3. If there are side effects which should be looked for, write them down. They are easy to forget and they may not appear promptly.
4. Remember that even the very old absorb medicine quite well. Most drugs are prescribed so that after a therapeutic level is reached, only enough is taken each day to replace the amount that would be metabolized and excreted. In the aged who have impaired detoxification and excretion mechanisms, the maintenance dose which may be just right initially can gradually change to become a mild overdose and cause toxic symptoms.
5. Because of the sensitivity of many aged people to some drug effects, the

margin between the effective dose and the toxic dose is small. For this reason, old people need to have the progress of their treatment checked with their physician on a regular schedule.

6. If your father is forgetful and you get his prescriptions filled, make a note of how many pills were obtained and when they should be used up if a regular dose schedule is maintained. For example, if a pill should be taken three times a day, 100 should last 33 days. If they last 40 days, you know your father has taken too few. If he asks for a refill in 24 days, you had better inquire what happened. Did he lose them or has he been taking more than he should?

Old people should not be denied medicine which may help them just because of a risk of an overdose. The solution is greater CARE, not "helpless neglect." With a little effort and patience, most medicines which need to be taken every day can be worked into a routine schedule. It is probably wise to keep the number of different medicines as low as possible and avoid accumulating many that are to be used only occasionally.

Old people sometimes become agitated, restless or "nervous" and have difficulty sleeping. Most physicians don't have time to explore all the possible social, psychiatric or organic causes of these symptoms. Tranquilizers or sedatives can often help relieve these symptoms. It should be remembered, however, that old people may be extremely sensitive to these drugs. They may become drowsy or confused on small doses and more vulnerable to falls or other accidents. Occasionally a paradoxical increase in agitation can occur which should obviously not be treated by an increase in the amount of the medicine. A different type should be tried.

My advice, therefore, is to learn as much as you can about your father's illness and the medicines he is taking. Don't nag - old men hate naggers as much as young men! Be patient, persistent and loving, but still realistic. Help him safely use his remaining faculties as much as he can.

### TIME CHANGE SUNDAY

To comply with the Daylight Saving Time Law, Nuclear Division employees will advance their clocks one hour at 2 a.m. Sunday, January 6. Shift workers will report to work Saturday on Central Time and clock out on Daylight Saving Time.

Oak Ridge employees will be on Eastern Daylight Saving Time, while Paducah employees will be on Central Daylight Saving Time.

## Division Retirees



Bradshaw



Mrs. Ferguson



Hartman

Orel C. Hartman, Y-12 mail room, elected an early retirement, at the end of the year. A native of Greenville, Hartman came to Y-12 in 1943 after working with Stone and Webster, and East Tennessee Packing Company.

He and his wife Hazel live on Guinn Road, Knoxville.



Owsley



Robinson

Several ORNL employees took retirement on January 1.

William A. Bradshaw, Plant and Equipment Division, had been with the Company since March, 1943. Bradshaw's plans include visiting his daughters in Georgia and Texas. The Bradshaw home is at Route 20, Grey Hendricks Road, Knoxville.

Louise Ferguson retired as a secretary in the Reactor Division. Mrs. Ferguson, who plays the piano and organ, plans to resume her music lessons. She will also do some traveling and reading. She lives at 613 West Broadway, Lenoir City.

Charles C. Congdon retired as a senior research staff member in the Biology Division. He has already assumed new duties at The University of Tennessee's Memorial Research Center.

Charles M. Brown was a guard in the Laboratory Protection Division. He resides at 106 Bussell Ferry Road, Lenoir City.

Edwin Charles Dunlap was a chemical operator in the Operations Division. The Dunlap home is at 222 North Purdue Avenue, Oak Ridge.

Russell C. Owsley, Plant and Equipment Division, recently celebrated his 30th anniversary with the Company. He resides at Route 17, Coward Mill Road, Knoxville.

William Robinson, a senior engineering draftsman in the Reactor Division, retired with over 23 years of company service. The Robinson home is at 400 West Vanderbilt Drive, Oak Ridge.

Elihu B. Shepherd was a guard in the Laboratory Protection Division. His home is at 105 Tilden Road, Oak Ridge.

### PADUCAH CREDIT UNION

The employees' Credit Union at the Paducah Plant has chosen 1:30 p.m. Saturday, January 20, as the date for its annual meeting. The place will be the Civic Center Building in Paducah. Details will follow in the next issue of the News.



Greenway



Hendrick

Milburn K. Greenway, a member of the General Staff's Accounting Division, Finance and Budget, retired at the end of December after 25 years' service. His home is at 701 Kesterson Drive, Knoxville.

The Oak Ridge Gaseous Diffusion has announced five additional retirements. Retiring at the end of December were:

C. C. Hendrick, a craft foreman in the Maintenance Division. He had been with Union Carbide almost 30 years, and lives at 107 Norman Lane, Oak Ridge.



Sutton



Swann

Charles L. Sutton, who had been at ORGDP for approximately 25 years, was a mechanical inspection supervisor in the Laboratory Division. His home is at 100 Oxford Road, Oak Ridge.

Ralph L. Swann, another near 30-year employee, retired from the Barrier Manufacturing Division. He lives at 339 Jefferson Ave., Oak Ridge.

### C SHIFT PARTY

Y-12's C Shift will hold a game-night party at the Oak Ridge Civic Center, January 15. Festivities get underway at 7 p.m. in the Social Room.

# QUESTION BOX

(Continued from page 1)

not possibly understand the problems of these minority groups. Why not have someone who is in this minority - weekly payroll women, both negro and white? I would be more apt to go to someone in the same situation as I am, than go to a man on the monthly payroll. How can this situation be changed?

**ANSWER:** The Affirmative Action representative's primary responsibility is not to be an "Ombudsman," but is to assist the Division Superintendent in obtaining the best possible affirmative action results. (See the article in the July 19 issue of Nuclear Division News.) We know

that credibility is the key to the success of the AA representatives. Supervisors and representatives know that they must respond to employees who have questions or complaints. If you haven't talked to your own representative or supervisor, give them a chance. It is unfair to categorize all members of any group as being unresponsive to the needs of members of any other group. If you have tried and feel your position hasn't been understood, or if you feel you are being penalized for asking, you can call your installation's and/or the Nuclear Division's EO Coordinator. The numbers and categories of the Nuclear Division AA representatives on October 1, 1973 are listed below.

	MEN		WOMEN		PAYROLL	
	White	Minority	White	Minority	Monthly	Weekly
ORGDP	8	4	2	1	12	3
Y-12	14	2	3	0	18	1
ORNL	18	2	9	1	25	5
PGDP	5	1	2	1	7	2
TOTAL	45	9	16	3	62	11

## Herman Postma

(Continued from page 1)

of the Atomic Energy Commission's Controlled Thermonuclear Research Standing Committee and the Controlled Thermonuclear Research ad hoc Committee on lasers.

He is a Fellow of the American Physical Society and the American Association for the Advancement of Science. In addition, he is a member of the American Nuclear Society and was a member of the Executive Committee, Division of Plasma Physics of the American Physical Society from 1969-70. Postma is presently a member of the Board of Editors of Nuclear Fusion.

### Honor graduate

A native of Wilmington, N.C., Postma received his bachelor of science degree, *summa cum laude*, from Duke University in 1955; his master's degree from Harvard University in 1957; and his Ph.D. from Harvard in 1959.

Postma is married to the former Patricia Dunigan of Oak Ridge. They and their two children live at 104 Berea Rd., Oak Ridge.

The following is a statement from Roger F. Hibbs, President of the Nuclear Division, concerning the announcement by Weinberg that he is resigning from the position as Director of the Oak Ridge National Laboratory:

"Dr. Weinberg has served as the Director of the Oak Ridge National Laboratory since 1955, and it has been during his tenure that ORNL achieved its status as one of the most outstanding research facilities of its kind in the world.

"With Dr. Weinberg advocating large-scale, team-research techniques, ORNL has undertaken highly productive investigations involving not only understanding

the atom and developing it as an energy source, but also basic studies in such areas as water resources, pollution and biology. In all of these, Dr. Weinberg has nurtured the concept that interdisciplinary research permits a national laboratory to achieve far more than could the same number of scientists, or disciplines, working in separate environs.

"Much of the success of the program at the Oak Ridge National Laboratory can be attributed to Dr. Weinberg's emphasis on excellence, both in basic research and in investigations of the practical utilization of nuclear and related technology."

## Shift workers may now obtain college credits

The Paducah Community College has designed a program to accommodate the rotating shift worker who wants to earn college credits toward an associate or full college degree without inconvenience.

Here is how it works: Advanced registration so that schedules are known ahead of time; a minimum of paper work; convenient schedules; morning and evening classes with the same instructor and materials; attend the classes of your choice that coincide with your shift change; instructors that recognize the needs of working students; and individual counseling to determine interest and direction. Veterans will be eligible as half-time students.

Additional information for scheduling interviews with school officials can be obtained by using the self-addressed cards located in the bus shelter or in the north end of the cafeteria, at the Paducah Plant.

## Division Retirees



Vester

Mrs. Vester

Retiring from the Fabrication and Maintenance Division are husband and wife team Margaret C. and James W. "Buster" Vester. They each have over 25 years' service at ORGDP. The Vesters live at 343 Vermont Ave., Oak Ridge.

## Paducah secretaries set seminar Jan. 19

Velva Blayney, chairman of the Education Committee for the Paducah-Kentucky Lake Chapter of the National Secretaries Association, announces a seminar, "Personality in Business," scheduled for January 19, 1974, at the Cabana Club, in Paducah. The one-day session will be from 9 a.m. to 3 p.m.

The seminar, which includes informational material, coffee and luncheon, is designed to aid the working woman, and covers a variety of subjects to aid in the development of the kind of personality that will be most effective in her professional and personal life.

Material describing the seminar and a registration form are available throughout the Paducah Plant.

Prosperity may spoil me,  
And my troubles all enhance;  
But, Lord send it down once,  
I think I'll take the chance!

## ORNL credit union meet slated for January 31

The ORNL Employees Federal Credit Union will hold its 26th Annual Meeting January 31, at 7:30 p.m. in the Shep Lauter Room of the Oak Ridge Civic Center.

The main order of business will be election of members to fill expiring terms of office on the Credit Committee and the Board of Directors. There will be four vacancies on the Board and three vacancies on the Committee. The Nominating Committee, which consists of Ada Misk, Neil Case and Steven Lisser, will present the slate below for the membership's consideration.

**Board of Directors:** Frank Binford, John Dougherty, Arnold Harrod, Harry Hubbell, Frank Neill, Roy Pruett, Ralph Shooster and Ben Smith.

**Credit Committee:** Darrell Copeland, Henry Klemski, Donna Michelson, Nancy Morris, Joe Ratledge and Brena Stevens.

Each member in attendance will be entitled to one vote for each of the offices to be filled. Members must be present to vote or win in the election.

All members are encouraged to come early to register for door prizes and pick up their copy of the annual report. Each member in attendance will receive a silver dollar and a chance to win one of 10 hams to be given away in a drawing.

Ballots and tickets for the ham drawing will be available at the door at 6:45 p.m.

## COMPANY Service

20 25 30

ORGDP  
30 YEARS

A. Paul Huber, Waldo L. Richardson, Bernard H. Thompson and William C. Hartman.

25 YEARS

Robert C. Willoughby and Frank D. Manning.

20 YEARS

James F. Liasa and John B. Cory Jr.



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