

RADON AWARENESS ON THE RISE



Tom Carroll (left) and Joe Greco (right) inspect a charcoal canister test kit. (Photo by Ed Farris)

by Diane L. Carroll

The house was perfect -- the location, the room layout, the lot, the decorating, even the price -- were exactly what they wanted. But before the couple buying the house could close the deal, they found one drawback: living there could be deadly.

"The radon levels in the house were so high that we felt the risk was just too great, especially for our children," said the prospective buyer, a PPPL employee. "We were very disappointed, and we're still wrangling with the lawyers over it," he said. "Six months ago when this occurred, radon

was just beginning to make the headlines. Now almost everyone has heard about it, at least to some extent."

PPPL physicist Fred Dylla, who lives in Lawrenceville, also had a run in with radon. "We tested our home last spring," Fred said. "The radon levels were above the Environmental Protection Agency (EPA) guidelines, so I need to fill cracks and paint the basement walls. When I'm done, we'll probably retest and see if we have to do anything else." As an amateur geologist, Fred has a particular interest in uranium-laden rock.

"In our area," said Fred, "it's probably the red shale I see so much of when I'm digging in the garden that contains the radon-producing uranium. It's very common on this side of Route 1. You can see some large outcrops of it along Washington Road just west of Lake Carnegie."

Tom Carroll of the Computer Division tested his Pennington home. "We got our test canisters from the Township," he said. "It cost less than \$10. Several of our neighbors had found radon in their homes so we weren't surprised when we got a slightly high reading in our basement. We have an older house," he continued, "and it's not very airtight. Radon is not a problem in the living areas, but we'll be doing some things to reduce the levels in the basement."

As awareness of the magnitude of the problem has risen, many townships have begun to provide charcoal canister tests at cost (see accompanying list). According to Tom, the test is easy to use. "You leave the canister in your basement or wherever radon is expected to collect, for two to four days. You package it in the envelope provided and mail it to the testing laboratory. They mail back the results directly to you." If the finding is above 4 picocuries per liter (pCi/l), the U.S. Environmental Protection Agency (EPA) recommended limit

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for indoor concentrations of radon, the New Jersey Department of Environmental Protection will retest your home at no cost. In addition, the DEP maintains a toll-free radon hotline and provides two very useful booklets on radon as well as a list of contractors experienced in radon remedies.

PPPL'ers concerned about radon have a special source of expertise available. Joe Greco, who joined the Laboratory last January as a health physicist, did his Masters thesis on radon. "I never thought much about it," said Joe, "until my thesis advisor said 'How about looking into the radon question?' This was just when radon was first being discussed in the news. It was fun being right in the middle of things."

Joe feels that the concern about radon is not misplaced. "The dangers from radon are real," he said. "Radon is a hazard when we inhale it. The radon decay products can become trapped in the lungs and may eventually lead to lung cancer. It has been calculated that the 4 pCi/l levels the EPA has established as an acceptable indoor level will deliver a radiation dose to the lungs of about 14 rem over the course of a year. Granted, this assumes a person is exposed 24 hours a day, 365 days a year, but this is still a considerable number. Here at PPPL our annual whole-body exposure limit for workers is 1 rem," he continued. "The people who work in potential radiation areas are carefully monitored. If they approach the 1-rem limit, their work assignment may be changed. Most of our employees don't work in radiation areas, so

their exposure is at background levels. Radon, then, can potentially make up a large percentage of the radiation exposure we all receive."

Most of the data on radon's health effects are extrapolated from studies of uranium miners. Given the uncertainties of the science and the prevalence of radon in this part of the country, Joe endorses the wisdom of a home radon test. "It's a good idea to do a simple charcoal canister test just to determine if there may be a problem. They're cheap, easy to do, and accurate enough as a screening measure. I tested my house before I bought it."

Employees with questions about radon can reach Joe at ext. 3319.

At PPPL, some of the buildings have been screened for radon. "We've done most of D-Site," said Joe. "The readings were all below 1 pCi/l. We will probably do some of the C-Site buildings this fall," he said.

Another PPPL'er interested in radon is Joe Stencel, Manager of the Project and Operational Safety Office. Last year at PPPL, Joe, as President-elect of the New Jersey Chapter of the Health Physics Society, hosted a day-long seminar on radon for health physicists. The speakers were experts on instrumentation, biological effects, regulations, and the measurements and remediation underway on buildings with high radon levels.

"There is a lot of debate right now as to whether the 4 pCi/l standard is too high or too low. But there is general agreement that the greater

your exposure to radon, the greater the risk of developing lung cancer," Joe said. "On the optimistic side, radon is a relatively easy problem for home owners to take care of. Even severe radon problems can be corrected. However, it is important that a reputable contractor be selected to do any remedial work. A lot of charlatans have entered the field. They prey on the fear aspect." Stencel suggests obtaining several estimates, asking for and checking a prospective contractor's references, and checking with the DEP.

Radon Test Kits

Area municipalities were surveyed as to whether or not they provide charcoal canister kits to enable residents to test their homes. In each municipality providing the service, a resident can pick up the kit at the municipal building for a fee of \$2.00. After exposing the charcoal to air for the specified period of time, the kit is sent to a testing laboratory with an additional fee of \$8.95 to \$12.00 for processing.

The following municipalities provide the test kits:

Ewing
Hamilton
Hopewell
Lawrence
Montgomery
Princeton Borough
Princeton Township
(available at Borough Hall)
West Windsor

The following do not have test kit program:

Cranbury
East Windsor
Plainsboro
South Brunswick
Trenton

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Inexpensive test kits are also available from:

Bernard L. Cohen, Ph.D.
Radon Project
Physics Department
University of Pittsburgh
Pittsburgh, PA 15260
(412) 624-3513

For \$20, the American Lung Association offers a three-month Radtrak test. It can be obtained by writing to the American Lung Association of New Jersey, 1600 Route 22 East, Union, NJ 07083. They will not accept telephone requests.

Radon Information Hotline

New Jersey Department of Environmental Protection

1-800-648-0394

The PPPL HOTLINE is issued by the Princeton University Plasma Physics Laboratory, a research facility supported by the United States Department of Energy. It is primarily an internal publication. Correspondence and requests to reprint material should be directed to PPPL Information Services, B366, C-Site, James Forrestal Campus, Ext. 2754.

Civic Commitment Shared

by Phyllis Rieger

If you were playing a game of PPPL trivial pursuit, which employee would you name as the man who spent his summer of '83 knocking on over 1600 doors?

Bob Kress may be known as the Manager of the Construction Facilities Branch at PPPL, but in nearby Montgomery Township where he lives and serves as committeeman, he's known as the rapper, the man who led his first campaign for votes by knocking on over 1600 doors. Bob, Dan Huttar, Holt Murray and Doug Post are four PPPL employees who lead local government in their communities.

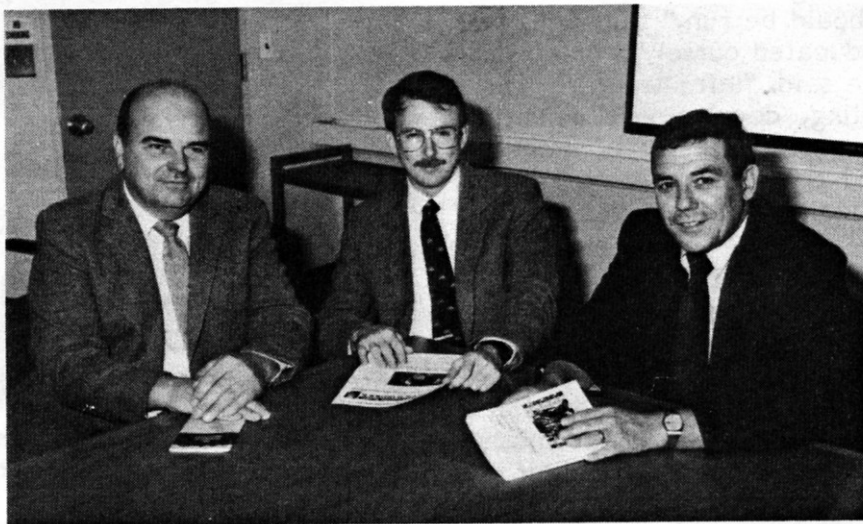
Bob and Dan are committeemen for Montgomery Township, Holt is a councilman in Hopewell Borough, and Doug is chairman of the Montgomery Township Environmental Commission.

Besides working at PPPL, they share a strong sense of commitment to civic affairs. They all have families and

feel their participation in grassroots government is a positive influence for themselves, their families and their communities. Bob said, "My daughter, Julie, has watched the political process and seen its effect. She's commented several times about different issues affecting Montgomery. She has a sense of awareness of local government and what goes on. I think I've been a good role model. That's important to me. It's very gratifying to see my youngest daughter Joann following in her sister's footsteps."

Montgomery Township, part of Somerset County, is a rapidly developing community of over 8000 residents. "It's one of the fastest growing of the 567 municipalities in the state," said Dan. "One of the reasons Bob and I ran was that we knew Montgomery needed strong leaders to weather the development storm. The heritage and beauty of the area

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Montgomery Township representatives include (left to right) Dan Huttar, Doug Post, and Bob Kress. (Photo by Ed Farris)

must be preserved. Harlingen, Belle Mead and Skillman—all these are part of Montgomery and give us a rich historical and architectural heritage," explained Dan, who's Head of Power Engineering at PPPL.

Dan's first involvement with local government came when he was asked to represent the interest of the Harlingen Reformed Church, of which he is an elder, before the township committee. A major highway system was proposed for Montgomery but the church, an historical structure, stood in its path.

"That was my first contact with the 'tar baby'," said Dan, who organized CARS (Citizens for Appropriate Road Systems). Calling on his friend and co-worker Bob for support, Dan circulated a petition to stop the highway. Together, they obtained 1150 signatures and formulated the Montgomery Official Highway policy statement, an important step in maintaining Montgomery's character.

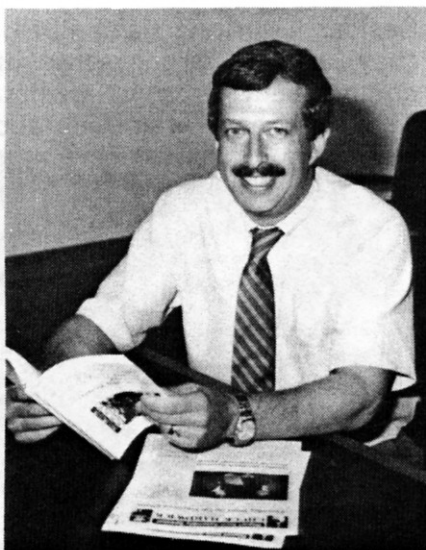
"Being engineers we have strong notions of how things should be run," said Bob. "We educated ourselves on issues," he said. "Infrastructure, recycling, development densities, planned unit developments—all these are now part of our local government vocabulary."

"Montgomery's citizens have a strong sense of civic pride and a willingness to help others," said Dan. "Recently, our residents contributed and collected \$25,000 to help another resident buy a wheelchair and special van. We're a community that cares."

Neither Bob nor Dan had extensive community involve-

ment before moving to Montgomery. Dan had some experience with a neighborhood association in Connecticut and Bob had gathered experience in planning and related matters while serving as Director of Engineering for the Connecticut New London Redevelopment Agency responsible for Captain's Walk, an urban renewal project which earned him national recognition.

Elected in 1983 for a three-year term, the duo sought reelection in 1986 because "some of the ideas we had put into motion our first term, still needed some cultivation," said Bob. "We won by a wider margin our second time and were very pleased." While Bob says he may run for yet another term, Dan said this one will be his last. Both feel local government can be time-consuming and often frustrating but they agree when you see you've helped to make your community a better place, it's worth it.



Hopewell Borough's Councilman Holt Murray. (Photo by Ed Farris)

Fellow local government official Holt Murray, who is part of the CIT Engineering Analy-

sis Team at PPPL, serves as a councilman in Hopewell Borough and he agrees with Dan and Bob that preserving a community's character is important.

"Hopewell is one of those towns where a cat used to be able to cross the road and not worry about losing one of its nine lives," said Holt, who explained the hamlet has a mixed population of about 2100 residents, many senior citizens. "Area farmers used to sell their land, retire and move into town," said Holt.

"Our borough is also rich in architectural history, like Montgomery's, and we've been fortunate to be able to retain most of its character and charm. We're proud to be one of the first municipalities in the state to establish a historic district to preserve our heritage," he said.

Holt's been a Hopewell habitant for ten years. He first became involved in local government by filling a vacancy on the Board of Adjustment. Then, the townspeople convinced him to run for council which he did because he was especially concerned with retaining Hopewell's small town atmosphere.

"I have four sons and I think Hopewell is a nice place for kids to grow up," said Holt.

While Holt enjoys his civic involvement, he concedes it does take quite a bit of his spare time as well as his wife's, who's on the zoning board. "The business of running a town, worrying about water, garbage, roads, etc. is more complex than I realized at first. Overall, I find generally that people are under-

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standing and encouraging so it makes it worthwhile," he said. "Budget time is especially busy but I feel my work helps to improve the quality of life for my family and community and that's important to me."

Doug Post, a principal research physicist and deputy head of CIT physics, became involved with local government for the same reasons as Holt. For the last year, Doug has chaired the Montgomery Township Environmental Commission which is responsible for studying and making recommendations concerning open space preservation, water resources, air pollution control, solid waste management, noise control, and soil and landscape protection. This commission has earned state-wide recognition for its endeavors regarding the siting of a Johnson and Johnson facility in the community. Doug and the other 6 commission members spent countless hours researching and reviewing the company's plans. For its efforts in environmental review, Montgomery's environmental commission received praise from the ANJEC (Association of New Jersey Environmental Commissions).

"We're proud of our effective efforts," said Doug. "It was a collaborative project since many volunteers, experts in their fields, worked side-by-side with commission members."

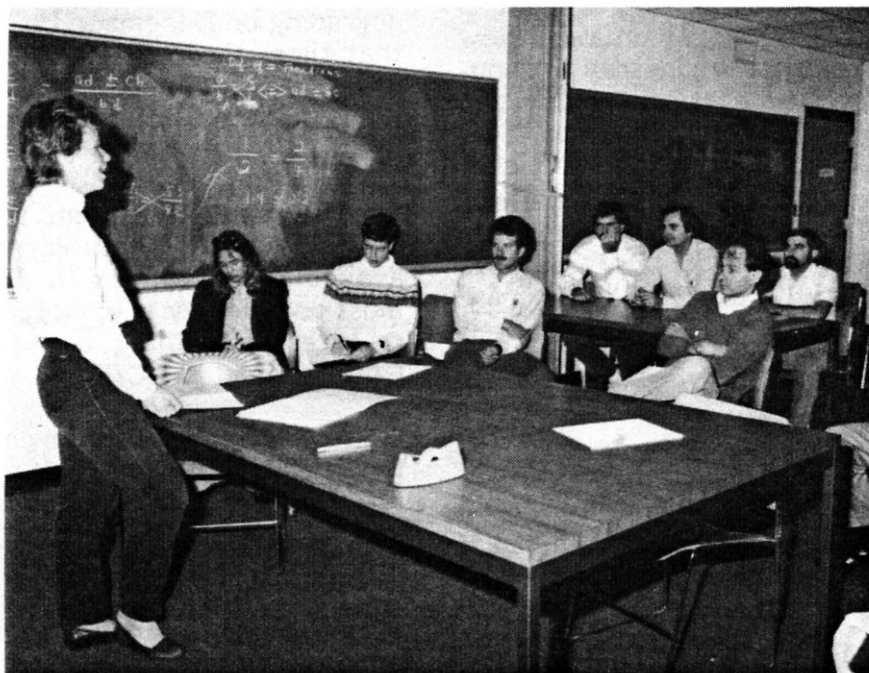
For Doug, civic involvement is a family affair since his wife serves on the school board. "We feel it's responsible to be a part of our community," said Doug, who said

he's always been interested in environmental matters.

He estimates he spends five to six hours a week at least on environmental matters. He explained the commission is also working on other issues including assessing the impact of a dump site which is slated to be sited near Route 206, across from the township building.

But Doug and the others feel their participation in the local government process has had a positive effect on their community as well as their personal lives. For these PPPL employees, volunteering their time and talents to local government interests is a way for them to show their community spirit by helping to make their municipalities the best they can be.

PPPL Skiers Plan Ski Trip



Gretchen Skelly (left) talks with PPPL skiers interested in a winter ski trip. (Photo by John Peoples)

Everyone is invited to join PPPL skiers for three days of skiing at one of Vermont's major ski resorts, Sugarbush Resort near Warren, Vermont. The trip is scheduled for the weekend of the Super Bowl game -- a good weekend to avoid crowds.

The bus will depart the Laboratory on Friday evening, January 29 and will return after a day of skiing on Monday, February 1. Accommodations will be at the "slope-side" condo-

miniums located in the heart of Sugarbush Village, which offers easy access to the ski slopes, ski rental shops, shopping, and restaurants. (Cross-country skiing is also available.)

The trip package costs \$276 each for four people per condo and \$246 each for six people per condo. This price includes a \$20 security deposit required by Sugarbush Lodging; It will be returned after the trip if no damage is done.

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Also included are three nights lodging, round trip bus transportation, and a three-day lift pass. A \$65 deposit is required by December 1st to reserve space on the trip.

Reservation forms are posted on all Laboratory bulletin boards. For more information on the trip, contact trip leader Gretchen Skelly, ext. 3635, or assistant trip leader Ed Weisenberger, ext. 2832.

Additionally, PPPL skiers may also be organizing a day trip to Hunter Mountain, New York on a Wednesday in January. The cost of the day trip will be approximately \$40, which will include a lift ticket and bus transportation. Definite plans have not been made, but contact Gretchen Skelly, ext. 3635, if you are interested in such a trip or if you would be interested in organizing it.



Off-Net Calls Gone from FTS

The General Services Administration has authorized all Department of Energy facilities to remove off-net calls from the FTS (Federal Telephone System) Network. FTS "off-net" calls are those calls requiring an area code in the dialing process. FTS "on-net" calls are those calls requiring only seven digits to access other government facilities, such as the national laboratories.

Since November 16, all off-net calls can be placed by dialing 9-1-area code-number. To place on-net calls, dial 8

and the seven digit FTS telephone number. After December 14, any off-net calls placed over the FTS network will be blocked.

Routing off-net FTS calls to a commercial carrier will result in considerable savings to the Laboratory.

New Phone Exchange for C-Site

The existing Centrex II Telephone System is scheduled for upgrading on December 14. At that time, the C-Site 683 exchange will change to 243. Please advise potential callers.

The Centrex III System will provide several features not available on Centrex II. The most noteworthy is extension-to-extension dialing between College Road and C/D-Sites.

Classes are scheduled for early December to explain all the new features. The exact times and dates will be available in late November.

Prior to the cutover, some minor disruptions in telephone service may be experienced. These annoyances should cease, once the cutover is completed. Even though disruptions are expected, please report all malfunctions to the Telephone Operator, x2694.

In Focus

December not only heralds the holidays but brings the second segment of "In Focus," PPPL's video magazine to the screen beginning December 15. Show times are 11:45 a.m. and 12:45 p.m. on December 15 and 16 in the MBG Auditorium and the same times on

December 17 at 307 College Road East in Room 3. Parts I and II will be shown on the 18th beginning at 11:45 a.m. in the MBG Auditorium.

"In Focus," created in response to employees' interest in knowing and understanding various aspects of the Laboratory, premiered in October. Part II features fire and hazardous material response personnel, volunteer tour guides and a look at the Lab, and a news update. Part I focused on the C-Site Machine Shop, the growth of PPPL, and the move to 307. Videotapes of Part I may be borrowed from the Photo Lab.

Suggestions for future features are welcome and should be directed to Production Manager Ed Farris at ext. 2090.

Providing Return Rides

There have been occasions in the past when PPPL employees have been transported to a hospital in the PPPL ambulance. Because the ambulance must return as soon as possible, the employee may need a return ride to the Laboratory after his/her release.

The Laboratory policy is that the employee's supervisor has primary responsibility for providing this transportation. However, when this is not possible, the supervisor may authorize the employee's return in a taxi directly to PPPL. With a proper receipt, an employee will be reimbursed through Petty Cash with the cost charged to the supervisor's cost center.



Thanksgiving

Thanksgiving is a special national holiday, richly steeped in individual and collective meaning. Thanksgiving signifies family, food, fun, history, and tradition all wrapped up into one mid-week day.

The Pilgrims celebrated the first Thanksgiving Day in February, 1621, to thank God for delivering them safely to this bountiful land. Afterward, Thanksgiving was celebrated sporadically until 1789, when President George Washington provided a day for public thanksgiving and prayer to acknowledge God's favor in establishing our republic. Still, it wasn't until 1864 that the fourth Thursday of November was designated by President Abraham Lincoln as the national day of thanksgiving. We've been observing it as a holiday ever since. This year we celebrate on November 26.

The turkey dinner we eat now is reminiscent of the first celebration, which included four wild turkeys that were presented by the Indians to the settlers as a sign of friendship. But the wild turkeys of the 17th Century were tough old birds in comparison to the succulent meat we eat each year.

Have You Ever Eaten This Much on a Holiday?

	Calories
2 pieces of toast/1 egg	250
stuffed celery	225
1 glass of cider	150
10 crackers with cheese	700
2 alcoholic drinks	300
3 handfuls of nuts	800
2 servings of turkey	400
mashed potatoes	200
candied sweet potatoes	200
1 helping of sauteed green beans	150
1 helping of squash	50
cranberry sauce	150
1 roll	100
3 tablespoons of butter	300
2 helpings of stuffing	600
2 pieces of pie	800
3 cups of coffee w/cream and sugar	150
6 pieces of fudge	1500
Total Calories:	7025

This represents a typical, day-long holiday blow-out, including a small breakfast, a main meal, and an evening snacking of leftovers.

When you consider that 3,500 excess calories generate a pound of fat--and that a 125-pound woman needs 1,400 calories to maintain her body weight or that a 175-pound man needs approximately 2,100 calories per day to maintain his--then it's no mystery why the average person gains weight so easily during the holidays.

Yet more important than the cranberries, pies, and turkeys we feast on is the traditional meaning of Thanksgiving. It is a time to pause and think about all the things for which to be thankful.

Here are a few suggestions on ways to make your holiday a more meaningful celebration.

- If someone you know is going to be alone on Thanksgiving, invite that person to dinner.
- Donate a Thanksgiving meal to a low-income family. Better yet, organize a community donation to supply a soup kitchen with Thanksgiving dinners.

- Donate your time to help prepare Thanksgiving for a community hall, nursing home, or church.
- Call a nursing home or seniors' apartment house and arrange to invite an ambulatory resident to your home for dinner.
- Ask all your guests to bring with them something to read before dinner that conveys their thoughts on Thanksgiving (such as a poem, an essay, or a self-composed work).
- Instead of a traditional grace, ask each of your guests to share what they are thankful for.

Have a rich holiday!

Emergency Closings

On those occasions when the Laboratory will be closed for the day or normal starting schedules will be delayed (late opening), special announcements will be made over the following radio stations:

Princeton	WHWH	1350 kHz
Trenton	WTTM	920 kHz
Trenton	WPST (fm)	97.5 Mhz
Levittown	WBCB	1490 kHz
New Brunswick	WCTC	1450 kHz

Please remember: When Princeton University is mentioned, the announcement also includes the Plasma Physics Laboratory.

The University begins monitoring weather conditions as early as 4 a.m., and arrives at the decision to open, close, or have a delayed opening as early as practical. PPPL does not independently arrive at its own decision to open or close.

The Laboratory has arranged with the Princeton Answering Service to provide an emergency telephone number to call to determine whether PPPL will be closed. When calling the answering service at 609-924-1760, individuals should identify themselves as Princeton Plasma Physics Laboratory employees. Please call this number only if you are unable to receive radio broadcast announcements and only to learn if the Laboratory will be opened or closed. No other information will be given by the answering service.

In the event that PPPL remains open, employees who find it impossible to report to work because of hazardous conditions should notify their supervisors as soon as possible that they are unable to report to work.

Safety Training Courses

The Occupational Safety Branch has scheduled the following safety training courses for December:

<u>Course</u>	<u>Date/Time/Location</u>
Radiation Safety Training	08-10 December 1:00-4:30 p.m. D-Site Training Trailer, D41-5
Hearing Conservation	15 December 1:30-3:00 p.m. Safety Training Trailer
Lockout/Tagout Training	17 December 1:30-3:00 p.m. Safety Training Trailer

Employees must obtain permission from their immediate supervisor to attend these classes. Supervisors should call Mary Ann McBride at ext. 3468 to enroll their employees.

Basic Safety for new employees is offered every Monday afternoon at 1:30 p.m. in the Safety Training Trailer.

CPR is offered every Tuesday at 9:00 a.m. in the Safety Training Trailer. Contact Mary Ann McBride, ext. 3468, to enroll.

OBITUARY

Virginia Arnesen died on November 10th. Virginia, who was a Secretary in the Power Branch of the Electronic and Electrical Engineering Division of the Engineering Department had been a Laboratory employee since 1966.

Virginia is survived by her husband, Arne, and a daughter Carolyn.

Memorial contributions may be made to the Griggstown Reformed Church Memorial Fund for the Ministry of Music, RD #1, Canal Road, Princeton, NJ 08540.

For Sale

FOR SALE: 1979 Mercury Capri. Original owner, air conditioning, am/fm radio, 67,000 miles. \$1400. Call Dianne, ext. 2685. Evenings 201-390-0321.