



HOTLINE

PRINCETON PLASMA PHYSICS LABORATORY

Vol. 5, No. 7

April 30, 1984

PBX

The conversion effort to transform PDX into the Princeton Beta Experiment (PBX) moved closer to completion March 13, when the PBX vacuum vessel was officially closed. The device is now undergoing discharge cleaning, control circuit testing, and conditioning of the vacuum vessel in preparation for creation of its first kidney-bean-shaped plasmas early in April.

A "changeover" ceremony was held at the machine to celebrate the vessel closing. Deputy Director of Technical Operations J.R. Thompson presented a citation and a bottle of champagne to each of the staff members who were most closely involved in the transformation. Coming in for commendations were Senior Lab and Shop staff member Les Gereg, who headed the conversion work force and "orchestrated the modifications," according to PBX co-head Kees Bol; and assistants Steve Styner, Rich Krsnak, Chuck Johnson, Ken Quadland and Dan Bollenbacher. "These guys lived inside the vacuum vessel for a long time," explained Dr. Bol.

Sam Hand, who served as PBX outside coordinator, was credited with maintaining the flow of hardware

(continued)

Taking a break from making alterations within the PBX vacuum vessel are (left to right) Ken Quadland, Rich Krsnak, Dan Bollenbacher, Les Gereg and Steve Styner. The five received commendations and champagne for their participation in the PDX/PBX conversion.



PBX project co-head Kees Bol (right) looks on as Deputy Director of Technical Operations J.R. Thompson lowers the sign officially renaming PDX to PBX. The "new" machine is expected to begin producing kidney-bean-shaped plasmas this month.



PBX (continued)

needed by Les and his crew. Recognition also went to head technician John Semler, who was responsible for securing all vacuum vessel ports and readying the machine for operation; and project engineer Don Knutson, who represented the many engineers who had an important role in the conversion. The PLT group (with whom PBX will share experimental time) was presented with a bottle of champagne, as was PBX co-head Michio Okabayashi. The latter bottle is to be opened only when PBX reaches its first major milestone — formation of a "bean."

Closing the vessel capped an intensive conversion effort that began last year. To create PBX, one original PDX divertor was removed, while another was repositioned on the machine midplane. The field generated by this relocated

coil, which has been protected by graphite armor, "pushes" the plasma into a kidney bean shape. The remaining PDX coils were moved back from the machine midplane to allow for bigger plasmas. A difficult part of the job involved installing the inch-thick aluminum plates, which help to keep the plasma stable and centered on the midplane.

The PBX configuration should theoretically permit formation of stable plasmas with beta values exceeding 10%. "Closing the vessel is an important achievement," Dr. Bol emphasized, "but an even bigger milestone will be when we make our first bean-shaped plasma. Not just because until we do, we won't know for sure that we can, but because that's when the experiment really gets started."

D-Site Parking

The TFTR construction lot, located outside the perimeter fence, has been converted into a decal and permit parking lot. As in the past, only authorized personnel will be allowed to park in the lot between 6 and 9 a.m.

Only authorized personnel will be allowed to park within the TFTR perimeter fence at any time. Individuals permitted to park within the fence will also be allowed in the TFTR construction yard. Halsey Allen will maintain lists of employees permitted to park in both the TFTR construction lot and within the TFTR perimeter.

Construction workers will be required to park next to the south gate, near the water towers, or at the old sewer plant.

Health & Safety Training

The following Health and Safety Courses are scheduled for April and May:

COURSE	RESPONSIBLE INSTRUCTOR	DATE & TIME
Self Contained Breathing Apparatus	S. Larson (x3324)	April 25 9:30 - 11:30 a.m.
Employee Orientation	B. Cohen (x2307)	Scheduled with Main Campus
Radiation Monitoring	J. Stencil (x2529)	May 15, 9 - 10:30 a.m.
Basic Electrical Safety	C. McBride (x3010)	May 17, 9:30 - 11:00 a.m.
Cardiopulmonary Resuscitation (CPR)	G. Tompkins (x2459)	May 14, 16, 18 9 a.m. - Noon OR 1 - 4 p.m.
Self-Contained Breathing Apparatus	S. Larson (x3324)	May 22 9:30 - 11:30 a.m.
Employees must obtain their immediate supervisors permission to attend. Supervisors must call the responsible instructor to enroll their employees.		

S-1 Update

Although experimentation on the S-1 spheromak has come to a temporary halt, activity associated with the machine is proceeding at a fever pitch. The device's damaged flux core liner has been removed, and a concerted effort is underway to complete fabrication and installation of a new liner by mid-May.

From its January 31 first plasma through June of 1983, 5,000 plasma shots were fired in S-1. For the first four months after start-up, according to experimental project head Dr. Masaaki Yamada, S-1 ran "very well; almost too good." The machine met most of its expected parameters, achieving a 200 kA plasma with a life-time exceeding 1 msec. However, plasma temperature only rose to half a million degrees Centigrade — half the target value.

During June, a hairline crack developed in the machine's flux core liner. The liner is a thin metal shell surrounding the flux core, and serves to maintain vacuum purity by encapsulating the flux core windings. The liner is made of Inconel 601, an expensive metal normally used in high-temperature applications. Inconel is also highly electrically resistive, enabling the flux core time constant to be kept low and allowing magnetic fields to penetrate the liner.

Inconel is a difficult metal to form, however. The individual halves of the liner were created by spinning, a process in which sheets of Inconel are placed over a form attached to a spinning platform. The platform revolves while a ram presses on the metal from above, slowly forcing it to conform to the form beneath it.

This spinning procedure cannot be accomplished in one operation, because Inconel becomes work-hardened and brittle after a period of forming. It must then be taken from the spin plat-

form and annealed (heated and cooled) to restore its pliability.

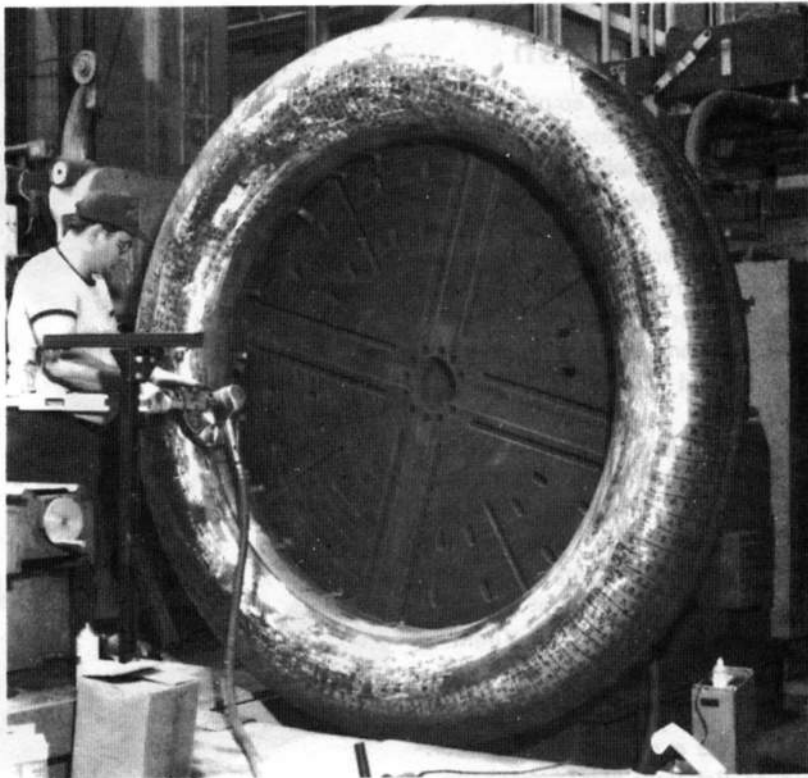
Since the grains of Inconel enlarge during the annealing process, microcracks evidently formed between grains of metal. The stress of the shaping process, coupled with the stresses encountered during plasma shots, apparently caused the south side of the liner to crack. The north side did not develop cracks; the suspicion is that the heat treatment variation caused the difference in fatigue life characteristics.

Attempts to patch the cracks by bonding and/or soldering new sections of metal onto the liner were marginally successful. Another 2,000 "extremely careful" shots were fired over the next nine months. A second, much more extensive crack occurred on the same side of the liner during glow discharge cleaning earlier this year, however, effectively halting experimentation. A

new liner is currently being fabricated and installed by the Mechanical Engineering Division.

The new liner will be ground to the required 0.02-inch thickness, rather than undergoing chemical etching as the original liner did. The new liner also differs from the original by the addition of fiberglass applied to its interior surfaces. The fiberglass is intended to reinforce the liner. It is being installed as an adjunct to the urethane potting material that fills the gap between the flux core and liner to absorb stresses from both.

The new liner is expected to be reinstalled on S-1 by May 15, and the machine should again be operational by late May. "We're currently reassessing the whole procedure for liner fabrication," Dr. Yamada said. "Our goal is to make a better liner through a new process," such as explosive metal forming. He added that "I expect us to get better results than we've gotten so far."



Bill Zimmer continues the delicate task of grinding a new flux core liner for the S-1 spheromak. The old liner was removed when cracks developed on its south side, hindering and effectively halting experimentation.

Bill Johnson

PPL welcomed a new employee recently, when Bill Johnson was hired as Manager of Employee Relations and Manpower Development.

Bill, a native Floridian, received a BS in journalism from the University of Florida. He later returned to the University to earn an MBA, specializing in economics and industrial relations.

Most of Bill's background has been with high-tech businesses. He brings with him 17 years of employee relations experience with the General Electric Company, having served in Professional and Non-Exempt Salaried Relations with GE in Salem, Virginia prior to joining the laboratory staff.

Bill joined GE as part of the corporate Employee Relations Management Program, which provided a series of assignments at varied company businesses over a four-year period. In addition to work in the personnel field, Bill served as a foreman and a quality control specialist in two Ft. Wayne, IN industrial firms.

He has worked with eight GE businesses in five states. His responsibilities have included recruiting, personnel policy and practice development, compensation, manpower planning and development, industrial relations, communications, training, and affirmative action.

Bill and his wife Phyllis have two children, Alisa, 9, and Christine, 12. "We're all looking forward to moving to the Princeton area," Bill said. "We've enjoyed Virginia, but we're ready for the more interesting life style we know we'll find here."

"I feel the diversity of my experience with high-tech businesses provides a close match with the PPL environment," Bill explained. "The employee relations objectives to be accomplished and the opportunity to contribute to



Bill Johnson

the success of the lab's mission were strong attractions for me. I sensed a high interest in and commitment to improving the lab-wide working environment."

Bill is already involved in the initial phases of the annual performance appraisal cycle, and has assumed administrative responsibility for introducing the Blessing/White program for individual development and managerial training.

"We have a real opportunity to grow the managerial skills needed by the laboratory," Bill said, "open new and improve existing channels of two-way communication, and develop practices that will better meet the changing needs of PPL. We must be sensitive enough to retain those things which have served employees and the lab, yet be responsive enough to recognize where change will serve better both today and in the future."

"I've learned one thing in the short time I've been here," Bill confides, "and that is how much I have to learn

about PPL people and the complexities of this fantastic operation. I invite suggestions for ways we can improve our working environment. I will be visiting the various shops and office areas to meet as many people as I can."

"When someone has a problem or concern about their work at the lab," he concluded, "I hope they will contact me. It's likely to result in a learning experience for both of us!"

Security Checkpoints

Security would like to remind all employees of the following:

Joggers — please remember to keep left when running and to move to the shoulder of the roadway so motor vehicles can pass freely.

Employees **MUST** wear their ID badges at all times while on the Forrestal Campus. Individuals found without visible badges will be challenged by the Security Department.

Property Passes

A new property pass system has been initiated on the Forrestal Campus (A, B, C, & D sites). Under the new procedure all materials being removed from Forrestal Campus in a private automobile must have an approved property pass that has been signed by an authorized supervisor. If challenged, an employee must provide Security with a copy of the pass. Passes are not required for the transport of materials between PPL facilities, or for materials that are transported off-site in government or commercial vehicles as long as the materials are identified by a shipping order, or some other documentation showing the reason for transport.

A three-part property pass must be completed and signed by an authorized supervisor. The segments of the pass should be distributed as follows:

- White (top) Copy: Retained by authorizing supervisor for follow-up to assure property is returned and to keep track of property out on loan.

- Yellow (2nd) and Manila (bottom) Copies (together): Must be attached to property being transported, with either string or tape.

- Yellow Copy: If challenged by a Security representative, the yellow copy will be surrendered to that representative. Security will note and forward the surrendered copy to the authorizing supervisor.

- Manila Copy: Remains affixed to property until property is returned. At that time, the manila copy is forwarded to the authorizing supervisor. The authorizing supervisor will then update his records to show that the equipment has been returned.

For property that may be transported repetitively between home and office, such as remote terminals, passes may be issued for up to one year. This will be noted on the pass expiration date. As indicated in the above procedures, the yellow copy of the pass will be sur-

rendered on initial challenge by Security.

Property passes are required for all equipment, material or property being transported, including tools and scrap. In the case of scrap, the manila copy of the pass will be returned after the material has been removed from PPL grounds. Approval for removal of scrap will only be issued by authorized Material Control representatives.

The following persons are authorized to approve property passes: H. Barbour, K. Bol, R. Daniels, D. Grove, J. Harralson, S. Holcombe (for scrap items), J. Hosea, J. Joyce, D. Meade, D. Mullaney, H. Eubank, J. Faul, R. Gould, D. Huttar, F. Perkins, D. Post, W. Rutkowski (for scrap items), N. Sauthoff, G. Sheffield, R. Smart, C. Staloff, C. Stout, K. Young, J. Lawson, R. Little, J. Lowrance, M. Norris, J. Peoples, M. Senitta, J. Sinnis. Each person will maintain a file of passes that have been issued and assure timely follow-up of any pending passes.



Spring Housecleaning

The storage of materials in hallways, courtyards, and other "public" areas is becoming an increasing problem. In many instances it is difficult for custodial and other clean-up personnel to determine whether an item is bona-fide scrap to be disposed of, or material being held for reuse.

In the interest of safety, employees are asked to help minimize the accumulation of material in "public" places. Custodial and clean-up personnel will be disposing of any questionable materials left in these areas on Friday afternoons and weekends. Any item

which must be temporarily stored in these areas should be clearly and obviously tagged to show that item is not to be disposed of, and to indicate the name of the person responsible for the material.

Area safety coordinators will be intensifying clean-up efforts in the coming weeks. Employees are requested to work with their area safety coordinators to identify and dispose of as much excess material as possible. If you need help in moving or disposing materials, please call Plant Maintenance (Jerry Williams) at ext. 3595.

For Sale

Colonial dining room set: table, four chairs, buffet with upper hutch. All solid pine. Call Tony DeMeo, ext. 2755.

Transitions

Born — to Felix Ullrich (PPL) and his wife, a son, Alexander, on February 11; and to Tom Holoman (PPL) and his wife, a baby girl on January 28; also to Irving Zatz (PPL), and his wife Janet, a boy, Jonathan, on February 14. Congratulations!

Died — Marcella G. Levin, PPL Accounting Dept., on February 9. Our condolences to her family.

Born — to Connie Cummings (PPL Accounting), a son, Dale Jr., on March 21. Congratulations!

Married — Sherri Berson of PPL Mechanical Engineering, to Scott Matthews April 5. Congratulations!

Back Seminar

"Oh, my aching back!"

Laboratory employees can avoid wailing that familiar refrain by taking the back protection class soon to be offered through the Occupational Medicine and Safety Department. A two-day demonstration class, taught by representatives of Health Enhancements Systems of Princeton, was held recently to train in-house instructors to teach future sessions.

The back class stresses a total approach to back pain. Regular practice of the precepts taught in class should help individuals prevent new back injuries and alleviate old back pain.

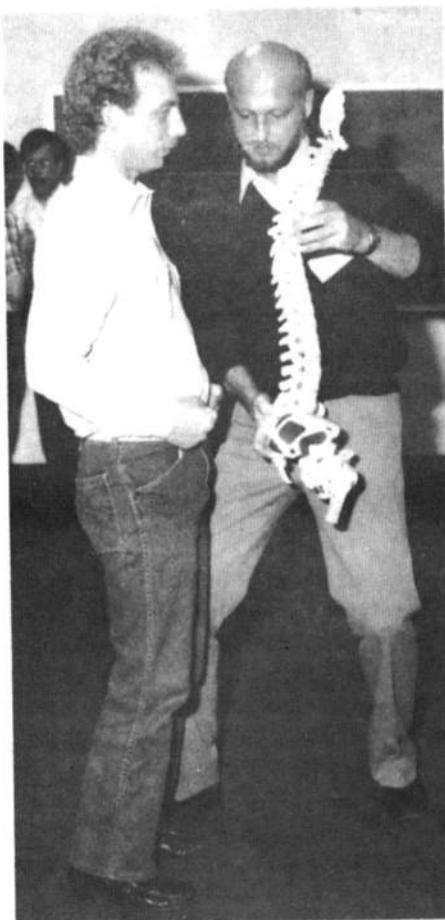
The course incorporates discussion with active participation. Dr. Ray Mulry, co-author of "12 Steps to a Pain-Free Back," helped demonstrate standing and walking in a "position of strength" during the training session. The stance, which includes a straight back, tight stomach, bent knees and tucked in buttocks, is difficult for unpracticed beginners. However, it affords the most support for the vulnerable back. The position of strength brings the spine back into balance, and is just one of the protective body mechanics methods students are taught.

Class participants will also learn stretching exercises to strengthen muscles associated with back support. Progressive relaxation and stress management techniques are also taught. The relief of stress is an essential part of the program, since stress causes muscle tightening which can lead to back injuries and spasms. Each class member will receive a copy of Dr. Mulry's book and a progressive relaxation tape to reinforce classroom discussion.

Following the one-day course, five PPL employees received additional training to aid them in teaching the

course themselves. Mary Ann McBride, Jane McCormick, Frank DiBella, Tom Goedert and Larry Owen will be teaching an abbreviated version of the course to other employees in the near future. Each session is expected to run approximately four hours, with an estimated 25 students per class.

Anyone interested in obtaining more information about the back course, or in signing up for a future session, should contact Bob Bergman at ext. 2223. Supervisory approval is required to register for the course.



Instructor Dr. Ray Mulry shows Frank DiBella the healthy position of his spine when standing in a "position of strength." The stance was taught as part of a two-day back seminar held at PPL in March.



Employees who want to boogie their way to a better body can join the PPL aerobics classes currently being held on Mondays, Wednesdays, and Fridays in the Sayre Hall auditorium.

Taught by Kathy Lane, the co-ed classes are designed to improve fitness, flexibility, and muscle tone. Additional benefits include weight and appetite control.

Each class lasts approximately one hour, and begins with a warm-up and slow stretching period. A selection of fairly vigorous exercises done to music and aimed at getting each participant's heart to beat at up to 70% of its capacity for approximately 25 minutes, follows. Classes conclude with toning and firming exercises for the stomach and legs, and a cool-down stretching session.

Participants should wear comfortable gym clothes, and bring sneakers and a towel to class. A four-week session of three classes per week costs \$15; classes meet from 12:05 to 12:50 p.m., or from 5:30 to 6:30 p.m. Classes are also open to spouses of PPL employees.

For further information about class registration, contact Kathy Lane at ext. 2691.

For Rent

CASUAL RUSTIC VACATION HOUSE FOR RENT IN Jamaica, West Indies. Beautiful resort location. For more information, contact Kathy at ext. 2691.



Driving Defensively

Pat Zeedyk, Transportation Services' Material Handling Supervisor, conducts classes in defensive driving for PPL employees. Pat is certified as a defensive driving instructor by the National Safety Council of New Jersey and is a graduate of the course herself. "Originally," laughs Pat, "the course ran for 10 hours, but I learned to talk faster and it's been trimmed to nine."

The course is taught in three weekly installments of three hours each. Movies are shown at each class but Pat stresses that the films are graphic, not gory. The course is designed to make drivers aware of many driving situations -- and of the accident potential present in each instance. A special segment of the class is devoted to driving under the influence of alcohol or drugs.

Pat offers the following driving tips from the course:

- Keep your cool -- an angry, upset driver is NOT a safe driver.

- Always anticipate what other drivers might do.

- Be aware of not only what's in front of you, but what's all around your own vehicle.

- Leave enough room between your car and the car ahead of you.

So far Pat has taught one class to 25 employees, with the next one planned for the near future. "We'd like to get all our professional drivers trained first," says Pat, "those people who drive a shuttle, maintenance vehicle, or ESU equipment. But the course is open to any employee." Graduates are sometimes offered a break on their insurance; Pat suggests individuals check with their own insurance companies.

Interested staff should obtain their supervisor's permission and then call Pat Zeedyk at ext. 3736.



United Way

Sometimes hard work is just another way to spell success. The results of the University's 1983 United Way Campaign were quite commendable. President William G. Bowen notes "a salutary increase" in this year's participation.

"In most organizations," says United Way official Gilbert Phillips, "an annual increase of five percent is considered a cause for satisfaction." In 1983, the number of University donors climbed from a 1982 total of 574 to 955 -- a rise of nearly 70 percent! The total number of dollars contributed in 1983 -- \$72,546 -- compares to a total of \$59,370 in 1982, representing an increase of 22 percent.

Heartfelt thanks from UW Campaign Chairman Professor Stanley Kelley, Jr., go to all the United Way Campaign Volunteers. PPL volunteers were: Beverly Leider, Barbara Nini, Meryl Finkelstein, Grace Taliaferro, Peter Smith, Edna Kalmus, Jerry Williams, Sandra Pierce, Ann O'Day, Sylvia Schiff, Olga Bernett, Betty Cary, Gloria Pollitt, Ruth Donald, Suzen Owen, Dolores Mazalewski, Sallie Young, Barbara Sarfaty, Rosemary Fuchs, Joyce Lawton, Joyce Bitzer, Dottie Pulyer, Glenda Fendrick, Marilyn McBride, Art Allen, Janet Hergenhan, Joanne Frazer, Allen Upperco, Pat Melsky, Roseann Wurst, Dottie Connor, Muriel Strohl, Carol Gill, Frank Anderson, Jim Bates, Edna Willis, Sherry Berson, Ange Raimo, Joe Rushinski, Frank Homan, Alex Bohr, Barbara Sobel, Gregg Tompkins, Kim Prutky, Gloria Pokrywka, Steve Iverson, and Rosemary Fuccello.

PPL 1984-85 Holiday Schedule

Independence Day	July 4	Wednesday
Labor Day	September 3	Monday
Thanksgiving	November 22, 23	Thursday, Friday
Christmas	December 24, 25	Monday, Tuesday
New Year's	December 31, Jan. 1	Monday, Tuesday
Memorial Day	May 27	Monday
Optional Holiday	_____	Two Additional Days



Buyers Conference

On February 11, PPL, in cooperation with the US DOE and the Small Business Administration, held a conference for Small, Disadvantaged and Women-owned Businesses. The conference provided an opportunity for these business people to meet PPL buyers, to learn about the laboratory's research effort, and familiarize themselves with the types of products and services purchased by the laboratory.

The conference was attended by 175 people representing 127 businesses. Attendees heard from John Hart, Group Supervisor, PPL Procurement; Don Carden, Manager, Princeton Area Office, DOE; J.R. Thompson, Deputy Director, Technical Operations, PPL; and Roger Gould, Director, Procurement Division, PPL. Conferees were given an opportunity to meet with PPL buyers on an individual basis. A tour of the facility was also provided as part of the day-long conference.

Conference coordinator, John Hart summarized participants' feedback by saying, "All firms we have heard from tell us the conference was productive and well organized, and felt that their time was well spent."



Buyers and businessmen got the opportunity to discuss their mutual concerns at a conference held for Small, Disadvantaged and Women-owned Businesses. The conference, hosted by PPL, was held in conjunction with the U.S. Department of Energy, the Small Business Administration, and the Laboratory.

Theodore Cashel – PPL Firefighter



Theodore Cashel

Firefighter Theodore Cashel has been selected to represent PPL on the standards and practices committee of the International Society of Fire Service Instructors.

Theodore recently accompanied Emergency Services Unit Captain Robert Brown to the 56th Annual Fire Department Instructors Conference in Cincinnati, Ohio. Sponsored by the Society, conference attendees discuss and resolve problems in the fire service field. New concepts in firefighting are also developed at the conference.

During the meeting, Theodore was chosen to represent PPL and industry

on the Society's committee on professional standards for industrial fire brigades. The committee will collect information from industrial fire brigades, examine existing standards, and determine whether additional standards are needed. The committee will issue a final report on its findings, which may later be incorporated into a nation-wide criteria for industrial fire brigades.

This was the first time Firefighter Cashel attended the Society conference. He has been a PPL firefighter since 1982.

Word Processing News Flash



Along with 24-hour operation of the NBI System 64 Monday through Friday, streaming time has been cut in half as of March 5, 1984.

Streaming will be done on Fridays only, and will take approximately $\frac{1}{2}$ - $\frac{3}{4}$ hour (from 8:15 to 9 a.m.). Monthly streaming will be incorporated in this Friday schedule, allowing the network system to be available approximately 416 hours a month.

To avoid time consuming recoveries, NBI operators should be sure the Print Queue is empty before turning equipment off on Thursday evenings and for the weekend.

Need access to the system on weekends? Simply call the Word Processing Center (ext. 2662) to assure the system will be available for you!

The PPL Hotline is issued by the Princeton University Plasma Physics Laboratory, a research facility supported by the U. S. Department of Energy. Correspondence should be directed to PPL Information Services, Module 2, C-Site, James Forrestal Campus, ext. 2754.

TAXI, Please

To most PPL employees, the shuttle isn't America's newest reusable spacecraft; it's the blue van that trundles them from site to site across the campus. The program got a boost when two 17-passenger mini-buses joined the shuttle fleet.

The buses are quite an improvement over shuttle service that began with

two sedans in the early 1970s. Pat Zeedyk, Material Handling Supervisor of Transportation Services, recalled one car with a heater that ran continuously, "even when it was 98 degrees out!" The shuttles ran at half-hour intervals then, and were also used to deliver mail. Air conditioning and radios were added to the vehicles in the mid-70s. The program switched

to vans in 1978.

The "new" mini-buses seat 17, as opposed to the regular shuttle capacity of nine or 10 riders. They also provide more convenient access to seating via a central aisle, and are generally more comfortable and dependable. Two of the vehicles are now in service, with a third on order.

(continued)

TAXI, Please (continued)

Each shuttle covers the three-and-a-half-mile trip between sites in 17 minutes, 30 times a day. The vehicles are on a staggered schedule, providing service at seven-minute intervals. The fleet covers approximately 355 miles and transports about 400 passengers daily. Year-end figures show the shuttles traveled 88,256 miles and carried 108,216 passengers during 1983 — all without leaving the PPL premises.

The folks who sit in the driver's seats of the shuttles include Janet Popp, Frances Dimmick, Luann Scarpati, Dave Brelsford, Gary Hill, Bob Mozak, Mike Cullinane, and Joe Nini. All shuttle drivers are checked out on vehicle operation before they carry a single passenger. Although no extra license is involved, each must pass a three-ton vehicle check, as well as defensive driving and DECAT (Drivers' Energy Conservation Awareness Training) courses.

Gary Hill, a former truck driver, is PPL's newest shuttle driver. Gary has been with the lab two months, and feels that the best part of the job is talking with the large number of different passengers.

At the other end of the seniority spectrum is Dave Brelsford, with five years on the job. He enjoys the freedom and responsibility he feels on off-campus, long-distance runs. "It's a challenge to be given a schedule and directions to get a person or piece of equipment picked up, delivered, and returned safely," says Dave. "Sometimes I have to go into New York City, find my way to a specific location, pick someone up and get him to JFK Airport safely, and on time. I like an assignment like that because I'm my own boss for that day. I have to make all the decisions to get everything to come out right." Dave smiles when he says, "Even if it winds up being a 12-hour day, it's a satisfying one."

Luann Scarpati is a sort of jack-of-all-trades. She fills in as a shuttle driver whenever needed, provides clerical help for Transportation Services Supervisor Henry Miller, and acts as dispatcher when regular dispatcher Pat Olsen is out. "It gives me a lot more variety and I like that," reports Luann.

Fran Dimmick came to PPL four years ago after the grocery store chain she was working for closed down. "My sister worked here and knew about an opening, and well, here I am," says Fran. Fran's "training" in cheerfulness, acquired in her previous job, has helped her as a shuttle driver. Grocery cashiers are told to greet each customer with a cheery hello, and that training really works well on Fran's current job, too. Proof of this theory was evidenced awhile back when Fran

was out of work due to injuries she sustained in an accident. "There was a group of really nice guys working in the Tech Shop that I'd pick up every night on the last run. They missed me when I'd been out for awhile and asked my sister where I was. They took up a collection and sent me a big box of cookies, some money, and a card that they had all signed. I was really touched by that. It was definitely the nicest thing that's happened to me on the job," Fran says proudly.

Fran's sister Janet Popp has been a shuttle driver for about five years. She had no difficulty pinpointing her favorite part of the job; "My husband Bob!" she says happily. "I met him when he rode my shuttle. He used to have to go back and forth between A- and C-Sites. One thing just led to another and now we've been married for nine months!" she beams.



Posing beside a PPL shuttle are drivers (rear, left to right) George Brumfield, Fran Dimmick, Janet Popp, Joe Nini, (front, left to right) John Tsafos and Mike Cullinane.