



HOTLINE

PRINCETON PLASMA PHYSICS LABORATORY

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Appointments Announced

Two subcommittees that will investigate energy conservation schemes have been established by the Energy Administration Committee, according to committee chairman Robert Gulay.

Ramon Pressburger has been appointed vice-chairman of the In-House Energy Awareness Subcommittee, with Larry Holpp serving as public relations officer. Other members of the committee include Mary Ann Brown, Captain Robert Goodwin, Mary Ann McBride, John Hirthler, Carl Jones, William Walker, Joseph Wood and Pat Zeedyk. The committee is responsible for developing, organizing, implementing and monitoring the in-house energy awareness plan for PPL.

A parallel group, the Electric Power Subcommittee, has been charged with developing, organizing, and implementing energy conservation methods to reduce the laboratory's energy bills. David O'Neill serves as vice-chairman of the committee,

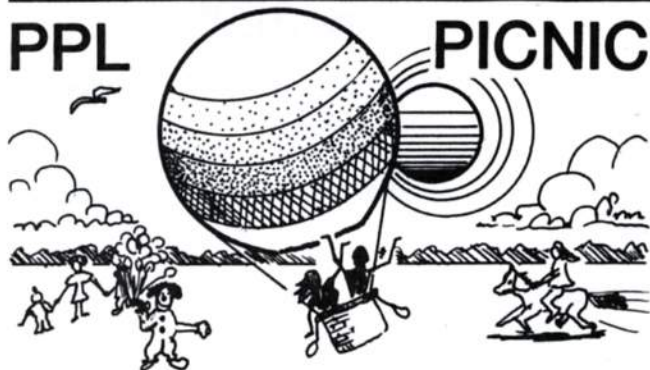
whose members are John Edwards, Don Harnsberger, Richard Farley, Marvin Richey and Richard Terhune.

The group is currently identifying locations throughout the laboratory for installation of metering equipment. Power consuming points and equipment will also be established, with strategies devised to control power usage.

The Energy Administration Committee, consisting of John Edwards, Ray Pressburger, David O'Neill and Don Harnsberger, will supervise and administer related energy conservation projects. The committee serves to aid the two subcommittees in furthering their projects.

Conrad Stout and Frank Fumia are observing management coordinators for the administrative committee. Gulay, chairman of the administrative committee, is also chairman of the two subcommittees.

The energy conservation program, a pilot program at PPL, is required by the DOE. Its purpose is to develop energy conservation attitudes in PPL staff.



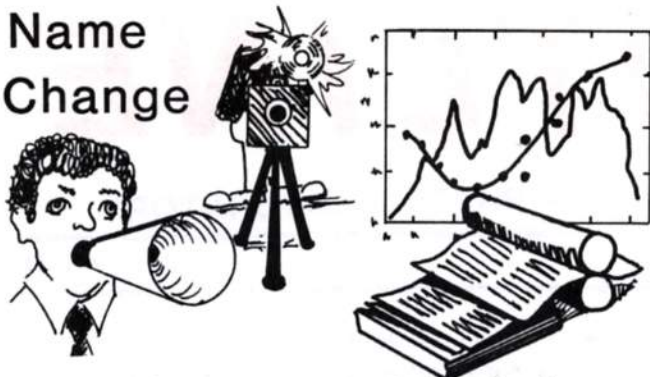
Tickets for the annual PPL Picnic, which will be held June 20 from 1 to 8 p.m., are on sale at the C-Site reception desk through June 18. Ticket prices are five dollars for adults and children 11 years of age or older. Children under 11 will be admitted free.

This year's edition of the picnic will feature a hot air balloon on a weather permitting basis, pony rides and a fish pond for youngsters, and hay rides. Games scheduled during the afternoon include an egg and balloon toss. Dinner, which will be served from 3 to 6 p.m., will include a picnic menu, beer and soda.

In accordance with the laboratory's DOE contract, the PPL picnic is limited to the PPL "family". Single employees may bring a guest, and married employees may purchase tickets for their spouse and their children. Unauthorized guests will be refused admittance to the picnic.

If you did not fill out a request form, you may still purchase tickets.

Name Change



In order to more appropriately describe its functions, the name of the Communications Office has changed to Information Services, effective June 1.

The Information Services branch is composed of the Photographic Services section, headed by John Peoples; the Graphics Services section, headed by Bernard Giehl; the Printing Services section, headed by George Geherty; and the Public and Employee Information section, headed directly by Anthony DeMeo, Manager of Information Services.

Call For Conservation

A single telephone call recently saved the laboratory approximately \$13,000 in additional electric bills.

According to Robert Gulay, chairman of the Energy Administration Committee, PPL power demand was heading toward an all-time peak in mid-May. Marvin Richey of the M-G Room noted the rise, and called Plant Maintenance to advise them of the situation. By shutting off space cooling chillers amounting to 1,050 horsepower, the demand rise was significantly curtailed.

Gulay commended Richey's action and urged other PPL employees aware of high power load or energy wasting situations to call him at ext. 3255.

HOUSE FOR SALE—Two story colonial, four bedrooms, full basement, attic storage. Walking distance to PPL. Oil heat, 2½ bath, two-car attached garage. City water and sewer; redwood deck off family room. Price \$115,000; availability negotiable. Call Russ Sinclair, 799-2297, after 5 p.m.

Tennis Tourney Results

The Administrative team emerged victorious at the conclusion of the second annual PPL Tennis Picnic, held May 31 at the university tennis courts.

All participants in this year's tourney were assigned to one of four teams. In the first set of matches, the Experimental physicists trounced the Theorists, while the Administrative team squeaked by the Engineers. In second round play, the Administrators overcame the Experimentalists to take the top tournament spot.

Members of the Administrative team included John Edwards, Chris Gillars, Simon Stonescu, Joe Winston, Diane Carroll, and Bob and Marilyn Middlebrook.

Guinea Pigs

Meg Gilbert, Employee Relations secretary, raises guinea pigs as a hobby. She usually sells the young to pet shops, but she prefers to place them "among friends." Guinea pigs are friendly, talkative, and odorless. They make excellent pets for responsible children age seven and up. Currently, Meg has a frisky litter of six available for adoption. If anyone is interested, please call her on ext. 2036.

FOUND — An article of feminine jewelry. To claim it, call Security at ext. 2893 and describe the article.

PPL Softball

Despite a recent 10-1 loss to the Carter Wallace team, the PPL softball squad has compiled a 3-1 record in the Princeton Industrial Softball League. The team is composed of 20 laboratory employees, and plays Tuesday evenings at 5:45 p.m.

The squad still has the majority of their 18-game season ahead of them, and spectators are urged to attend games to cheer the team on. Season schedules are posted at each of the stockrooms, with "home" games played on the softball field near the airstrip.

For further information on the team, contact Tom Holoman at ext. 2748.

Storm Warnings



Thunderstorms are one of nature's most powerful forces, one that can easily turn deadly when accompanied by lightning. PPL Fire Chief Jack Anderson offers the following tips to avoid storm danger:

If you are indoors during a thunderstorm, stay away from doors, windows and fireplaces; these things create a pathway that might attract lightning. Also avoid radiators, stoves, sinks, pipes, and electrical appliances, which act as conductors if lightning strikes. Remove the plug and antenna wires from your TV set, and don't use electrical appliances or telephones.

A thunderstorm is no time to take a bath! A single lightning bolt carries a charge of over one

million volts. Even a lightning strike on a household water main could transmit current through the water pipes, causing electrocution.

If you are caught outdoors, don't stand near the highest object in the area, since it will act as a natural lightning rod. Don't become the highest object, either: crouch or lie flat, and avoid touching any metal objects. If you're at the seashore, get out of the water or off small boats and into a car or a building.

If your skin tingles or your hair stands up, drop to the ground immediately — these are signs lightning may be about to strike you.

Persons struck by lightning carry no electrical charge, and can be handled without fear of shock. Persons "killed" by lightning may be revived by immediate cardiopulmonary resuscitation (CPR).

Information Meeting



PPL played host to 137 representatives of industry, government, other laboratories and universities during its May Information Meeting. Participants were brought up to date on the laboratory's progress, and toured PPL facilities during their two-day stay.

A number of posters, highlighting various facets of PPL's program, were on display during the meeting. Information Services is interested in preserving many of these posters for installation as permanent wall displays throughout the laboratory. Participants who displayed posters are asked to contact Information Services at ext. 2751.

The meeting was organized by PPL Assistant Director, Earl Tanner.

ppl people

NO OPTICAL ILLUSIONS FOR PALLADINO

Dick Palladino is keeping busy these days, trying to improve the fiber of the laboratory. Dick, who came to PPL in July 1955, is a project physicist currently working on the use of fiber optics for TFTR.

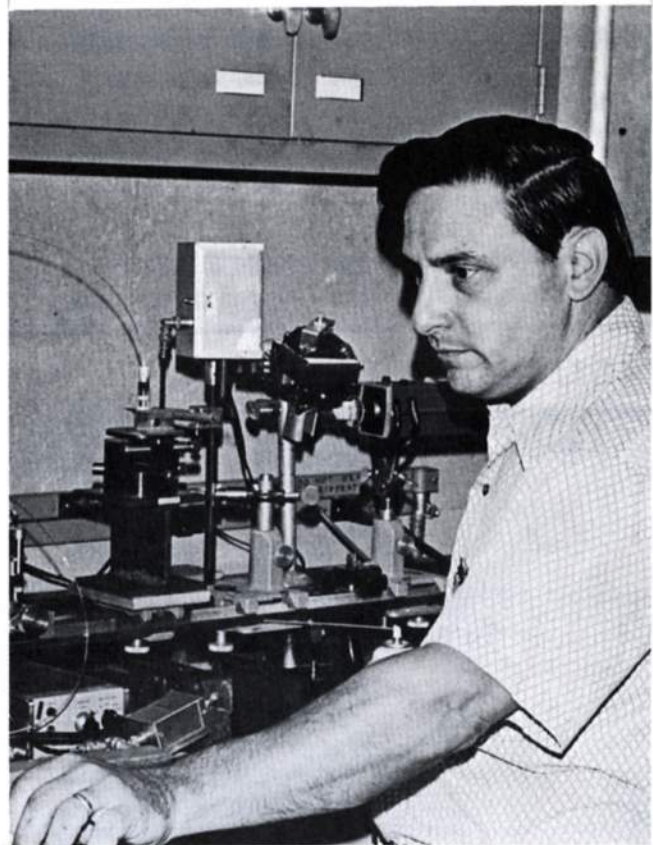
Fiber optics involves the transmission of light through thin strands of plastic or glass. Light moves down the fiber's length, "bouncing" along in a ricochet pattern by reflecting from the fiber's surface.

Dick's work, in addition to the fiber optics program, at present involves optical calibration of various pieces of diagnostic equipment. "Traditionally, the Bureau of Standards rated detectors on how sensitive they would be to a given quantity of available light. We are purchasing equipment to establish that capability ourselves."

The fiber optics project is in the developmental phase. "Fiber optics is a huge field," according to Dick, "so we've had to define specific areas for our research." The investigation centers on taking light from one place (near an operating tokamak) to another place (a spectrometer) very efficiently.

The fiber bundles are instrumental in the use of the TV Thomson Scattering diagnostic. A laser beam passing through the plasma is scattered by the plasma particles. The light is then transmitted through fiber optic cables to a spectrometer, where the width of the spectra lines is analyzed. The data from the spectrometer is presented to a TV camera tube, which digitalizes and displays it on a TV camera. The fiber optic component of the process is "one little link in the chain," according to Dick.

Fiber optics can transmit the light in digital signal form, and can eliminate the "static" or "noise" that might occur with electrical conductors. Light



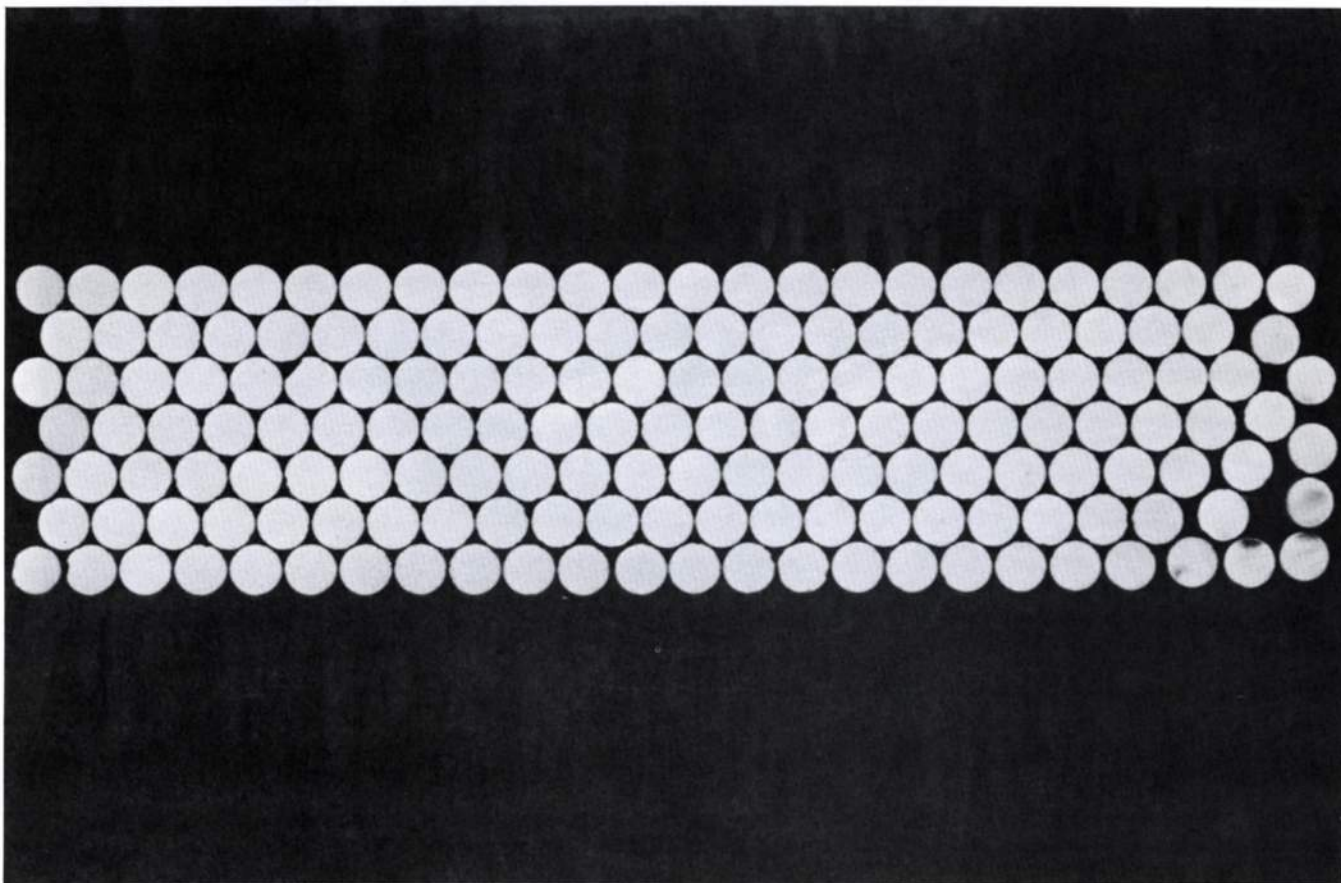
from the plasma is detected as a pulse and transmitted along the fiber bundle through various lenses to the spectrometer.

Use of fiber optics allows scientists to change the shape of the light image they receive from the plasma. A group of fibers bunched into a circular cable at the plasma end, for example, can be spread into a line at the spectrometer end. This flexibility, which Dick likened to the difference between a rigid pipe and a hose, permits easier 'squeezing' of gathered light into a spectrometer slit for analysis. It also makes fiber cables relatively immune to the vibrations produced by the tokamak during operation.

The fiber optics program dovetails with the TFTR diagnostic program. Dick perceives special problems with TFTR, since the fiber cables will have to withstand much higher radiation levels than on PLT and PDX. Dick will be helping test materials and techniques that will allow the fibers to survive use on TFTR diagnostics.

very enthusiastic about it. I felt they had a tiger by the tail."

"They seemed like a great bunch of people to work with," he continued, "and something here just seemed to fascinate me. I was assured that the research would be for peaceful purposes, and this



One end of a fiber bundle, highly magnified. The bundle is 1/4" wide by 1/16" thick, tightly packed for efficient transmission.

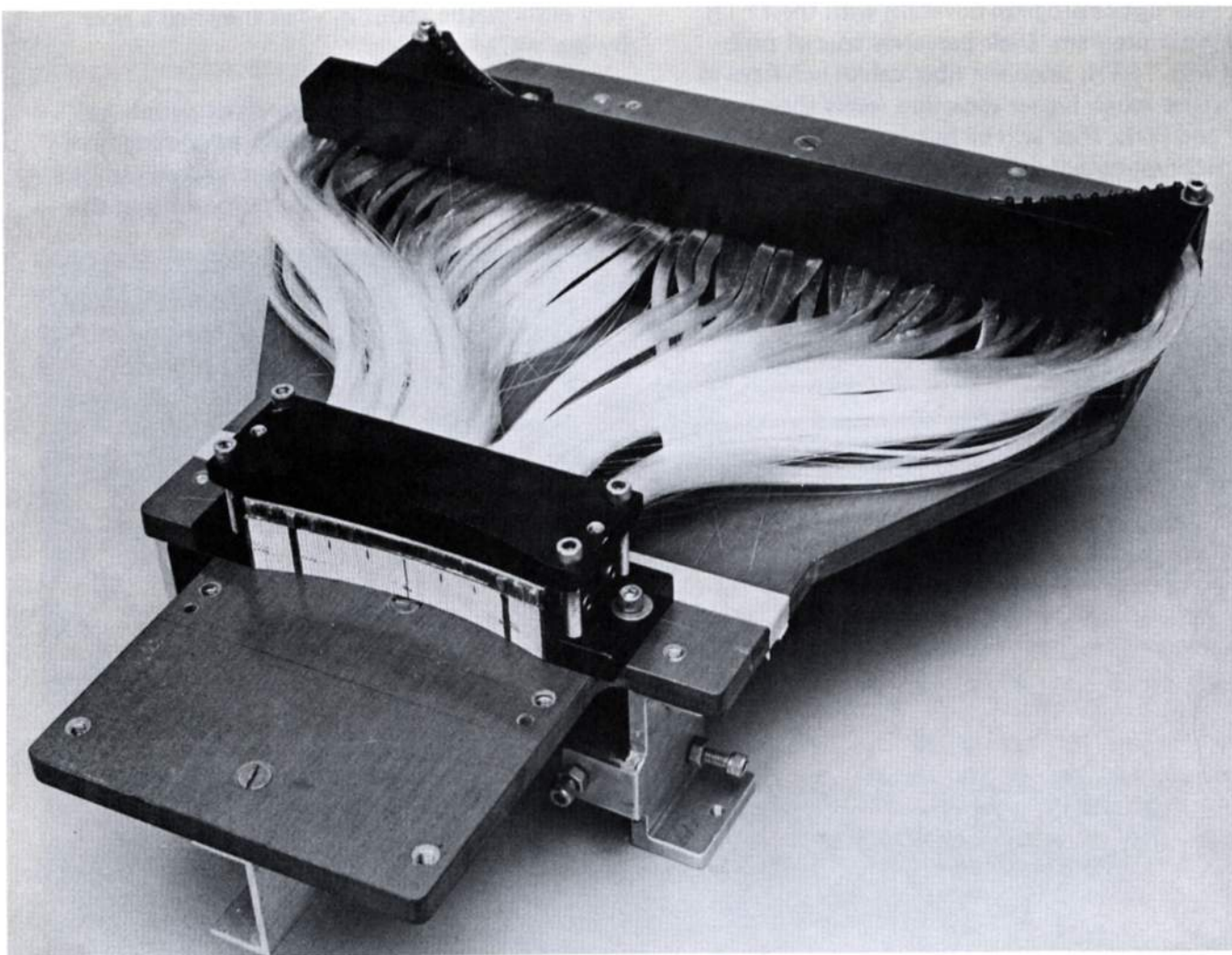
Dick is working with the optics materials portion of the research, rather than the design of the diagnostic systems themselves. "Even that is quite a development program," he says.

Dick's inveterate curiosity about things is what drew him to Princeton in the first place. After earning his physics degree from Case Tech in 1955, "There were a lot of job offers that year. I found out about this place through the head of my department, who'd visited here. It triggered my curiosity; I sent a letter out, and got an interview with Mel Gottlieb and Tom Stix, among others. The program was still classified, so they couldn't tell me what they were working on, but I was very impressed with the people here. I might not have known what they were doing, but they were

was the kind of environment I wanted to work in. And I haven't been disappointed."

Dick recalled the days in the mid-50's when attaining the goal of breakeven seemed right around the corner. "There was a lot of optimism back then. If we had harnessed the fission process in 10 to 15 years, there seemed no reason why fusion should be all that difficult. We had a lot to learn!"

His tenure at PPL has been an educational experience in Dick's eyes. "I'm always learning something new," he contends. "I worked with Tom Stix 20 years ago on some small fusion devices, when Tom began working on ICRH (ion cyclotron res-



An assembly of fibers for TV Thomson Scattering on PLT. Seventy-six bundles are shown in the array.

onance heating). He tested the concept, and proved that it worked. He's a real pioneer, the dean of ICRH."

Dick also worked for Shoichi Yoshikawa on multipole systems. He's had a hand in model building, and developed a hydrogen cyanide laser for density measurements on PLT. "It's since been dismantled," he admits. "That's one thing you learn in research: how to be a good loser when things you work on don't work or are surpassed by something better."

Dick credits his schooling with "teaching me to become a good student, teaching me how to learn. You have to be a perpetual student, research what's already been discovered, then build on someone else's stuff. I was taught how to dig facts out of the underbrush, and that being a student

is a job; the trip is important, not necessarily your ultimate destination."

That journey has changed Dick along the way. "I initially saw science as a means to get to the truth," he recalls, "and I've found that that belief hasn't resulted in a completely satisfying romance (with science). I wanted to find the truth, but I found that some scientists didn't love the truth that much. They'd rather hang onto their model of the world than get to reality."

Dicks says that "since I've gotten my priorities straight, I enjoy work more. I like being part of the team; I don't need to be the hero. I enjoy a supporting role more, working with leaders who set the pace. I seem to be best suited for "hands-on" technology, and this is a very fertile soil I've been planted in!"