

## From The People Point of View

The uncomfortable awareness of the environmental hazards brought about by the scientific and industrial revolutions of the last two centuries, including the risks of the thermonuclear war, has led to a broad debate on the position of technology in America's and indeed the world's future.

The issues in this debate are serious issues of personal and national values, life styles, and economic structures: "Must we think . . . [about] perpetual and unbridled growth - in wealth, energy consumption, production, profit - or is there another way?"

Energy has become an urgent issue in this debate; disputes about energy generation and use are part of this debate. The campaign against some ways of generating power, notably nuclear power and strip coal mining are creating organized political action, "one in which issues are sharply drawn between private and public interest, between property values and human values, between corporate power and individual freedoms" and between life styles and cultural values.

Blocking of the Kaiparowits power complex in southern Utah resulted from public opposition to damage of a hitherto altogether unspoiled area. Similar disputes have erupted in West Germany, France, and other West European countries. Nuclear power was a prominent political issue in the September, 1976, election in Sweden.

In the 141st Brookhaven Lecture "Power versus People: Cutting the Human Costs," Dr. Leonard D. Hamilton will outline the intent and scope of the activities of the Biomedical and Environmental Assessment Division on Wednesday, December 1, at 8 p.m. in Berkner Hall.

The Division's research is aimed at developing an accurate assessment of the long-range and widely diffused, as well as the conspicuous short-range and localized, biomedical and environmental effects of energy production and use. All forms of energy generation based on fossil fuel, hydro, nuclear and new technologies are assessed to develop as accurate an estimate as possible of their health and environmental costs. The assessment covers this totality including the public perception of efforts to estimate the real cost.

Improvement in the public perceptions of the true health costs will not necessarily reduce the attacks on power, but it might improve the quality of scepticism about such Nader statements on nuclear safety that: "The Titanic was supposed to be unsinkable. It sank"; a realization that, on many of these issues, the Friends of the Earth work out as support for Colonel



Leonard Hamilton

Qaddafi [Prime Minister of Libya]. For each form of energy a price has to be paid. Our task is to estimate this price, and show how this can be kept minimal, and spread as equitably as possible.

Since 1973 Dr. Hamilton has been head of the Biomedical and Environmental Assessment Group which this year became a division of the National Center for Analysis of Energy Systems. He joined the Laboratory in 1964 as head of the Microbiology Division in Medical and Attending Physician at the Medical Research Hospital.

Dr. Hamilton spent the prior 14 years at the Sloan-Kettering Institute for Cancer Research where his laboratory research centered on the molecular structure of the genetic material (DNA) and the cells in man concerned with the immune mechanism. He continued this research at Brookhaven. His interest in the risks of radiation for man began with his Ph.D. work in Cambridge, and since DNA and the immune system are prime targets of radiation damage has continued throughout his career. Since 1973 his group has been responsible to ERDA for the assessment of health effects from energy systems and of coordinating such assessments at national laboratories.

Dr. Hamilton received his Bachelor of Arts in 1943 and qualified in Medicine from Oxford University in 1945. He received the Doctor of Medicine degree from Oxford in 1951 and the Ph.D. in experimental pathology from Cambridge University in 1952.

A buffet supper will be served in the Brookhaven Center before the lecture beginning at 6:30 p.m. Reservations should be made in advance by calling Ext. 3541 before 5 p.m. Refreshments will be available in the lobby of Berkner Hall immediately after the lecture.

## Add Color & Flavor & Accelerate

Before packed audiences, Murray Gell-Mann, Nobel Laureate from Cal Tech, delivered two lectures last week as the Brookhaven Distinguished Lecturer in Physics for 1976.

In his first lecture, "What Are The Building Blocks of Matter?" Gell-Mann explained why, at last, we have a real candidate for a theory of the strong interactions.

He calls this theory Quantum Chromodynamics. The reason for the name is that the building blocks of matter, the quarks, must come in three distinct types and, by analogy to the three primary colors, they are called colored quarks. While these colors are essential to the description of matter, they can never be separated; all matter being white. Quarks will never be observed as particles but live only within the proton, pi-meson, etc.; color is a true hidden variable.

Although Gell-Mann is very optimistic that the correct theory is nearly at hand, he said that there are many difficult experimental and theoretical questions that must be answered before it is established.

In his second lecture he went into many of these questions in some detail.

He also discussed the nature of even grander theories, unifying weak and strong interactions and even gravitation. Many of these speculations would require energies beyond our wildest dreams to test experimentally, but one is of great importance in Brookhaven's plans for the near future. This is the intermediate vector boson. The theory of the weak and electromagnetic interaction, which he called Quantum Flavor Dynamics, requires the existence of a boson which transmits the weak force responsible for beta-decay, neutrino scattering, etc. The mass is expected to be between 50 GeV/c<sup>2</sup> and 100 GeV/c<sup>2</sup>, and he emphasized, should be readily produced by relatively inexpensive storage rings that could be constructed quite soon. The ISABELLE project proposed by Brookhaven is just the sort of facility he is referring to.

In addition to his talks, he spent considerable time consulting with members of our staff, visitors from Stony Brook, and AGS users.



In the Physics Seminar room at the start of the Gell-Mann lectures were: (from left) Physics Department Chairman Nicholas Samios, Laboratory Director George Vineyard, Nobel Laureate Murray Gell-Mann, Brookhaven Distinguished Lecturer in Physics for 1976, and Laurence Trueman, group leader, High Energy Theory group. — photo by Rosen

## Their Way

You've heard it often - the wail of an ambulance siren. It is a distress signal notifying all before it that a sick or injured person is being taken to a hospital where dedicated people will do everything possible to restore the patient to good health.

A good number of Long Island hospitals are part of the United Way community. At present, 18 non-profit hospitals in Nassau and Suffolk are affiliated with this federation. In these hospitals, many volunteers contribute their time and skill to ease the load of the doctors and nurses.

Assisting in the emergency room at one of the United Way hospitals - Mather Memorial - are two BNL employees, Don Gilzinger on Wednesday evenings and Dick Skelton on Fridays. Many other BNL night-time volunteers can also be seen elsewhere at Mather and at other area hospitals.

For over three years Dick and Don have seen quite a few BNLers come through with minor and serious injuries who were glad to see a familiar face. "Being a part of the community is a real plus," say Don. "We can sympathize and reassure the patient and his or her family perhaps better than the professional staff because we are members of the community." Adds Dick, "Ninety-nine percent of the arrivals have never been in an emergency room before, and it can be a frightening experience, par-

ticularly for the little ones."

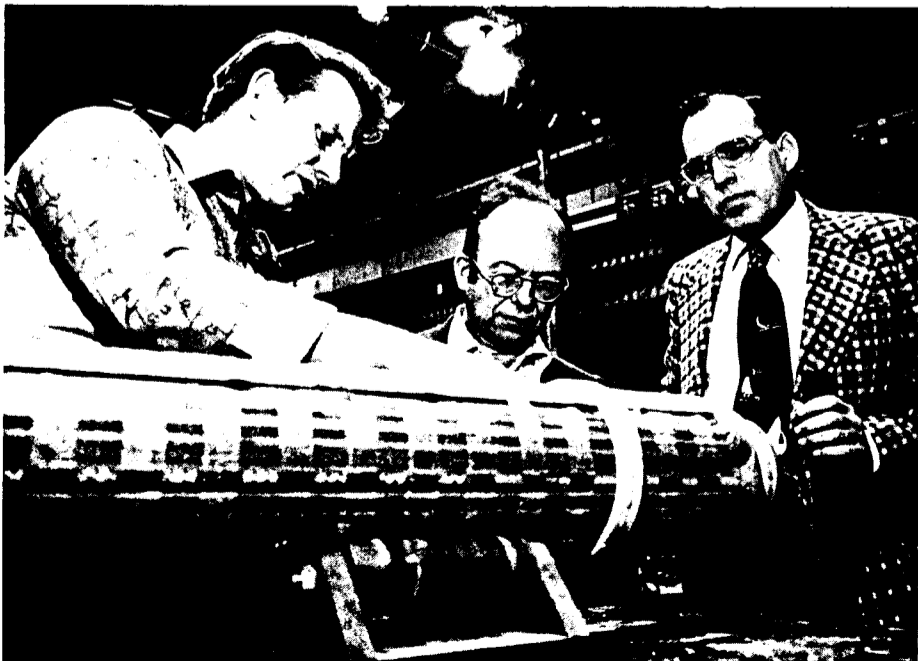
Don admits he gravitates toward the children. They arrive with swallowed coins, marbles, once a closed (fortunately) safety pin, cinnamon candies in the ears; and the most scared are those who suspect they'll need stitches. "I try to get them to talk about other things to calm them down," he says.

Asked about a typical night on the job, both agreed that sometimes they're "bored stiff," but not very often. Usually they don't have a minute to sit down and frequently work well beyond their customary four hours, such as the night 14 firemen were brought in suffering from gas inhalation or when multiple-patient car accidents occur.

What do emergency room volunteers do? Replies Dick, "We take injury and medical information from the patient and family, do our best to reassure all concerned, transport patients to and from X-ray, deliver blood samples to the lab, wash instruments for sterilization, make beds,

(Continued on page 2)

## SLAC Director Visits



Dr. Wolfgang Panofsky (center), Director of the Stanford Linear Accelerator Center, visited the Lab on November 10. Here he discusses the ISABELLE program with Al McInturff (left), head of the dipole magnet project and Mark Barton, Chairman of the Accelerator Department. Dr. Panofsky also gave a talk to the staff on his recent trip to China.

## Swine Flu Shots

As we go to press, scheduling details of the swine flu vaccination program are not yet available. A memorandum to all employees will be issued on Monday advising them the time they are to report to the gym on November 30 for the shots.

## United Way (Continued)

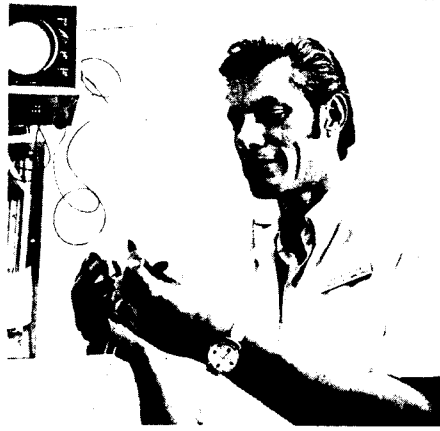
etc." Don sums it up: "We're gophers, orderlies, amateur psychologists . . . whatever's needed to free doctors and nurses for their primary functions."

Don's volunteer job has been made easier because he received extensive first aid training as an Air Force Navigator. But, like most volunteers, he received most of his training on the job, unlike Dick who has racked up all sorts of extra-curricular credentials.

On Tuesday evenings Dick teaches cardiopulmonary resuscitation (CPR) to the nurses at Mather - a course he has also given for the Heart Association. An emergency medical technician senior instructor for New York State, he trained BNL's firemen to become the first EMTs at the Lab. He is also an advanced medical technician instructor for Suffolk's paramedic mobile pre-hospital coronary care units and a Port Jefferson ambulance company volunteer.



Don Gilzinger (Accelerator Department) volunteers on Wednesday evenings at Mather Memorial Hospital.



Dick Skelton (Medical Department) also volunteers his services at Mather on Friday evenings. —photos by Walton

And if that's not enough, he'll soon be pushing the "gun" at Port Jefferson area schools to inoculate students against swine flu. Dick's really a frustrated M.D. who regrets dropping out of school.

What motivates such dedication? To Don, "It's a way of helping, a way of alleviating someone else's misfortune. It's hard work, but it's satisfying although I don't think I do it just for self satisfaction." Dick likes to help people, too, but his primary reason relates to his teaching and dealing with emergency life support procedures on the outside. "You never know enough about injuries, and handling a person the wrong way at the scene can be very detrimental. The doctors and I have a good rapport, and I am constantly building on my knowledge from them."

Dick and Don and others like them at United Way hospitals are there when we need them. So are the services of 97 other affiliated agencies in our community.

Please give.

## Flutist And Pianist In Next BERA Concert

The next concert of the 1976-77 season will take place on Wednesday, December 8, at 8:30 p.m. in Berkner Hall. It will consist of a joint recital by two prominent young American artists, flutist Paula Robison and pianist Ruth Laredo.

Paula Robison, winner of the top prize in the Munich Competition and the only American flutist to win first prize in the Geneva International Competition, is rapidly becoming one of the most celebrated instrumentalists on the music scene today. Her engagements include appearances with the New York Philharmonic, the Orchestra de la Suisse Romande, the Louisville Symphony, Alexander Schneider's Chamber Orchestra and the Lincoln Center Music Society among others.

With a large repertoire encompassing music of all periods, Ms. Robison has just completed a recording for Vanguard of Romantic Flute Music. She has given New York Premieres of many contemporary works including Toru Takemitsu's "Voice" for solo flute in December, 1971, and "Fluting for Paula" by Leon Kirchner at Boston in August, 1973. This season she will perform Schubert's "Introduction and Variations" at Alice Tully Hall, the recording of which was named a "Recording of Special Merit" by *Stereo Review*.

As a recitalist, as guest artist with an increasing number of orchestras, as charter member of the prestigious Chamber Music



Pianist Ruth Laredo

Ravel, which were prize-winners.

As an exclusive Columbia Records artist Ms. Laredo is currently recording the complete piano solo works of Sergei Rachmaninoff. As soloist with major U.S. orchestras including the New York Philharmonic, the Cleveland Orchestra, the Detroit Symphony, the Boston Symphony, the Philadelphia Orchestra and the National Symphony, Ruth Laredo has achieved a reputation as one of today's foremost pianists.

The recital at BNL will feature works by Bach, Schubert, Rachmaninoff (piano solo), Franck and Leon Kirchner (flute solo).

### Admission

Regular	\$4.00
Students and persons over 65	2.00
Persons under 18	1.00



Flutist Paula Robison

Society of Lincoln Center and the Orpheus Trio, the young Nashville-born flutist has received rave reviews wherever she goes.

Ruth Laredo needs little introduction to this audience. She gave a much acclaimed recital at BNL last season and was so pleased at her reception here that she promptly suggested the joint recital with Ms. Robison.

Born and raised in Detroit, Ruth Laredo studied with Rudolf Serkin at the Curtis Institute of Music, and made her New York orchestral debut with Leopold Stokowski and the American Symphony, whose 1976/77 season she will be opening. She has won wide recognition for her recordings of the complete Scriabin Sonatas and Preludes, as well as her recordings of

## Fire Protection Units

The BERA Board has made arrangements to offer BNL employees, at a very substantial saving, three sizes of Walter Kidde Company fire extinguishers, and a Guardion smoke detector.

All four units will be on display and orders will be taken starting on Monday, November 29 through Friday, December 3, from 11:30 a.m. to 1:30 p.m., at the Cafeteria.

### Prices

Extinguishers:	
3 3/4 RPS-1, rated 10-BC	\$ 9.00
2 3/8 TPS-1, rated 1-A: 10-BC	\$10.00
6 TPS-1, rated 2-A:40-BC	\$15.00
Guardion Smoke Detector	\$30.00

## I.B.E.W. Meeting

Local 2230, I.B.E.W. will hold its regular monthly meeting on Monday, November 29, 1976, at 8 p.m. in the Knights of Columbus Hall, Railroad Ave., Patchogue. There will also be an afternoon meeting at 2 p.m. for shift workers in the Union office at 31 Oak Street, Patchogue. On the agenda will be regular business, committee reports and the President's report.

## Cafeteria Menu

Week Ending Nov. 26, 1976

Monday, November 22	
Tomato Bouillon	
Franks & Baked Beans	1.05
Barbecued Fresh Ham & 1 veg.	1.30
Tuesday, November 23	
Cream of Chicken Soup	
Chopped Steak & 1 veg.	1.10
Chinese Pepper Steak on Rice	1.25
Wednesday, November 24	
Split Pea Soup	
Fried Filet & 1 veg.	1.15
Pot Roast & 1 veg.	1.30
Thursday, November 25	
Snack Bar Service 9 a.m. to 2 p.m.	
Friday, November 26	
Snack Bar Service 9 a.m. to 2 p.m.	

## Diners Note

The Cafeteria will operate only the Snack Bar Service from 9:00 a.m. until 2:00 p.m. daily over the Thanksgiving Holiday weekend, Thursday November 25 through Sunday November 28.

The Center will be closed on Thursday, Friday and Saturday, reopening at 5:00 p.m. on Sunday November 28.

Happy Turkey to All!

## Hear Ye! Hear Ye!

The time for Christmas has come near 'Tis time for us all to spread good cheer Singing is part of it

Why not put your heart in it?

All you must do

Is call 4512

And let me know you'll be there

Join the annual Christmas caroling; all are welcome.

— Bonnie McNair

## Arrivals & Departures

### Arrivals

Jeffrey H. Brateman	App. Science
Jack W. Davidoff	App. Science
David L. Hayslip	Physics
Jan F. Herbst	Physics
Leon Lawrence	Ph. & Gr. Arts
Arlene Mayo	Accelerator
Yoshihiko Mizumachi	Accelerator
Chee Tung	App. Science
Robert F. Wieser	App. Science

### Departures

Ellen K. Cobb	App. Math
Alan Schulhoff	App. Science

## Foreign Press Visitors



A number of foreign journalists, particularly interested in energy conservation, visited the Laboratory on Tuesday. Checking in at Berkner Hall with Virginia Sayre, Visitor Tour Coordinator (at right) are: Flora Halzman (Brazil), Darrell Drucker (U.S. Information Agency) and Jiro Yokoyama (Japan). — photos by Rosen

## Revising Computer Language



Bruce Martin, Applied Mathematics Department, welcomes members of the FORTRAN Standards Committee (ANSI Technical Committee X3J3), who have been meeting at Brookhaven all week to complete the forthcoming revision to the FORTRAN language standards.

# BROOKHAVEN BULLETIN

Published weekly for the employees of BROOKHAVEN NATIONAL LABORATORY

**BERNICE PETERSEN**, Editor  
**DOUG HUMPHREY**, Photo-Journalist  
**CAROL PETRAITIS**, Copy Preparation

40 Brookhaven Ave., Upton, N.Y. 11973  
Telephone (516) 345-2345

**CARL R. THIEN**, Public Relations Officer

## In Print

"Boiling Liquid-Metal Heat Transfer," by Orrington E. Dwyer, has just been published by the American Nuclear Society, as the 13th monograph in the AEC-ERDA series on nuclear science and technology. The 450-page volume is the first in the series to be published by a BNL scientist. The book is written primarily for researchers, design engineers, and graduate students in nuclear chemical and mechanical engineering.

In this volume the technical status of boiling liquid-metal heat transfer is discussed by the author, who has reviewed the extensive world literature and referred to nearly 300 papers and reports of original research, most of which originated in the U.S.A. and the U.S.S.R. Dwyer has also drawn on the results of his own research in this field, which has been his primary concern for the last ten years. His many other published works in the field of liquid-metal heat transfer have been primarily in the area of forced convection.

Dwyer, who is currently a Guest Scientist in DAS, retired earlier this year as a Senior Scientist after 25 years with the Laboratory. He was formerly Head of the Chemical Engineering Division and Leader of the Heat Transfer Research Group.

## CREF Unit Values

1976

January	\$40.31	February	\$39.76
March	40.75	April	40.10
May	39.69	June	41.60
July	41.21	August	40.94
September	41.59		
October	\$40.62		

## Rambling Around

These are bits and pieces picked up from here and there with occasional observations by the Editor:

Perhaps it is time to start thinking of new names for our streets, names that are descriptive of the work of the Laboratory. Just for starters, here are a few to ponder:

- Proton Place
- STEMstrasse
- Energy Speedway
- Charm Circle
- Fusion Fairway
- Plasma Artery
- Quark Alley
- Half Life Road
- Polymer Parkway
- Magnet Mews
- Neutrino Drive
- Radioactive Way

If you have any further ideas, let us hear from you.

\* \* \* \*

Over the centuries, people have been expressing themselves by writing on every available wall.

The following philosophical comments were culled from the book of *Graffiti - Two Thousand Years of Wall Writing* by Robert Reisner:

- The world is flat - class of 1491
- Repeal the law of gravity
- Save water, bathe with friends
- There's too much water in our chlorine supply
- If you're pushing 50 that's exercise enough
- Life is a hereditary disease
- The world is coming to an end! Repent and return those library books!

## Tennis Champs



In their first year of competition, the BNL Men's Doubles Tennis team came away with the White League Championship for 1976 in a tournament sponsored by the Long Island Industrial Recreation Association. Some of the team members are shown above. Starting from the bottom (from left to right) are: S. Feldberg, L. Passell; K. Foley, J. Abata, A. Kevey; N. Bhagat, S. Takagi, F. Martin; S. Shapiro, R. Gibbs, T. Koetzle.

## Notice

Because of the Thanksgiving holidays on November 25 and 26, the *Bulletin* will not be published next week.

## Cooking Exchange

Next Wednesday, November 24, the Cooking Exchange will present its annual Thanksgiving spectacular production.

This year, a mixture of Chinese and American dishes will be featured. There will be classic Chinese egg rolls, Cornish game hens stuffed with wild rice, broccoli with Hollandaise, molded cranberry salad, and, of course, the traditional dessert - pie.

We hope to see all you at the Recreation Building at 12:30 p.m. Bring yourself, 75¢ for tasting privileges, your children - baby-sitting provided at 25¢/child - and be prepared for a marvelous afternoon!

## New York City Trip

The next group railroad trip to New York City will be on Wednesday, December 1. Departure will be at 8:32 a.m. from the Patchogue LIRR Station. The round trip fare for adults is \$2.45, children under six years ride free. Any trip to Patchogue may be used for the return trip.

This would be a good opportunity to do some Christmas shopping and see the different holiday decorations around the city. Reserve a ticket by sending your fare through the U.S. mail to P.O. Box 322, Upton, New York, no later than November 22. Make checks payable to "Cash." Refunds will be made only if cancellations are received before noon on November 23.

## Sports News Bowling

### Black & Blue League

The Hot Stuffs continue to lead the league but their margin has been cut down to 7½ points by the New Horizons. High games were Ed Sperry 257, Fred Hohmann 208, Colleen Holland 187, Debbie Antonio 169. High gross pots were won by Colleen Holland 252 and Fred Hohmann 236.

A reminder that there will be no bowling on November 24, the Wednesday before Thanksgiving.

### Red League

Congrats this week to J. Connelly winning a club award with a 601 scratch series, including a 244 game. After nine weeks of bowling, the Red League is pretty well bunched-up and all teams still have a shot at the first half. High games for the night were R. Larsen 227/204, R. Jones 202, R. Meier 202, R. Wilson 202, J. Cain 201, J. Fontana 201, P. Klotz 200.

### Pink League

The Pinsplitters are still in first place ahead by seven. The Personnelities and Fiscal Assets are tied for second. The night belonged to Fran Scesny and Kay Hunt. Fran bowled a 205/489 series, her first. Well Joe, you said she would never be a bowler, but if I were you, I'd start moving my trophies out to make room for Fran's! Kay bowled a 203 for a 526 series earning the first gross award for a 676. Great bowling gals!

### Green League

The Sparks keep their lead of eleven as they took eight from the 76ers. J. Carroll had a 210 and G. Spira a 201. The Pick-Ups moved back into second place as they took eleven from the Freon Loaders. The Got-A-Hit-Ums managed to take eight from the Old Timers. The Blue Jays only got five from the Designers as H. Marshall had a 220 and M. Iarocci a 209. The Pin-ball Wizards took seven while the Super Cools only took four. The Charley Browns finally decided to make their move as they took eleven from the Bubble Boys. Phil Borzi had a 215/686 gross and J. Scott a 213.

## Pool Reopening Delayed

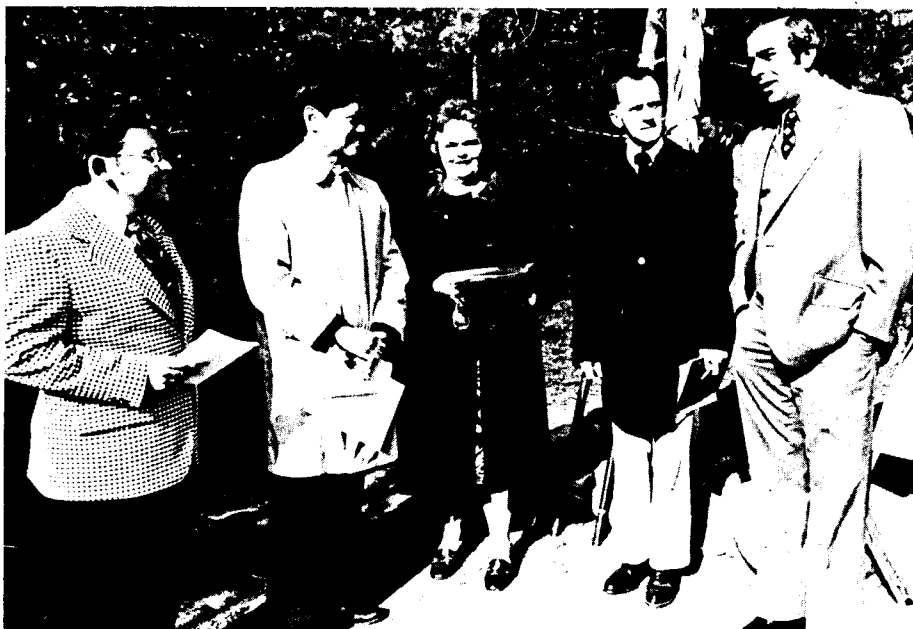
Extensive painting and other maintenance work makes it necessary to delay reopening the pool until Monday, November 29.

Expiration date of season tickets has been extended through December 31.

## 1977 BNL Holidays

New Year's Day	Friday	December 31 (1976)
Washington's Birthday	Monday	February 21
Memorial Day	Monday	May 30
Independence Day	Monday	July 4
Floating Holiday	Tuesday	July 5
Labor Day	Monday	September 5
Floating Holiday	Tuesday	September 6
Veteran's Day	Friday	November 11
Thanksgiving Day	Thursday	November 24
Day after Thanksgiving	Friday	November 25
Christmas Eve	Friday	December 23 (½ day)
Christmas Day	Monday	December 26

## Bicentennial Time Capsule



At ceremonies held recently by the Brookhaven Town Bicentennial Commission at Longwood Historical Park in Ridge, a time capsule was buried which will not be opened until July 4, 2076. The capsule contains letters from prominent persons and memorabilia from various organizations, and was made by the Process Technology Division of DAS. Participating in the ceremonies were: (from left) Meyer Steinberg, head of Process Technology, Nobel Prize winner Dr. Chen Ning Yang, Project Chairman Lucille S. Marinuzzi, Town Historian David A. Overton and Brookhaven Town Supervisor John F. Randolph.

