

Contract Ratified

On Monday, members of Local 2230 of the International Brotherhood of Electrical Workers ratified a new contract with AUI which had been agreed to on August 2 by Union and Laboratory officials.

The principal provision of the two-year contract which is effective August 1, 1979, calls for an 8% wage increase the first year and a 6% increase the second year.

In addition, should the pay standard established by the President's Council on Wage and Price Stability increase by an amount up to one percent per annum, the change is automatically applied to the above rates for each year. If the pay standard increases one percent or more, one percent is applied automatically and the Union is given the right to reopen the contract for the purpose of negotiating the balance of the increase, up to the amount permissible by the revised wage guidelines. Any increase due to a change in the pay standard is not effective prior to October 1, 1979. If the contract were reopened, the only subject to be negotiated would be wages.

This year, for the first time, the union membership includes 43 employees of Photography and Graphic Arts as a result of an election held under the jurisdiction of the National Labor Relations Board last December. The other 614 union members are employed in Plant Engineering, Central Shops, Supply & Materiel, Firefighters and Staff Services.

Robot Draws Record Crowds To BNL Tour

Last Saturday and Sunday 4700 people came to Brookhaven to visit with R2D2 and Darth Vader. They all stayed to see Brookhaven's work in scientific research and tour the Exhibit Center.

This R2D2 is a duplicate of the robot of "Star Wars" fame and was built from a variety of spare parts by two enterprising physics teachers from upstate New York. One of them generally plays Darth Vader, although on this weekend a relative was recruited for the role. The "superstars" proved a big drawing card and the huge weekend crowds had the small BNL staff hopping.

At times during the Sunday tour when more than 3000 people were here, it appeared an impossible task for the 11 people who managed the tours and the bus dispatching, but the day ended normally with nobody stranded or lost and the staff worn but happy.

Public Relations Officer Carl Thien praised the way that the Tour Guides and Exhibit Center staff coped with the record number of people. "Everyone improvised and adjusted to the situation. There was no time for a snack or even a glass of soda, and the staff retained its good humor even to the closing minutes."

The mini tour, at the Nuclear Waste Management Research group in the old HIRDL building, had a constant stream of visitors who kept that staff busy with questions and comments about this valuable area of research.

At the Exhibit Center, while R2D2 was giving energy saving tips in his squeaky voice, Darth Vader was giving out autographs to children and adults alike. So many people were using the Shadow Wall on the Life Science level that the flash unit was almost going as fast as a disco strobe light. The Tic Tac Toe computer ran out of paper several times but it too retained its sense of humor and did not go beyond a mild reproof when a visitor tried to win by cheating. "This is an honest game," the computer would print, "Now make a real choice."

The Science Store resembled a Macy's toy department at Christmas time. People lined up to buy gyroscopes, lenses, frisbees and magnets. Others bought books on physics, general science and Long Island's history.

For the Cafeteria staff of Saga Foods, the
(Continued on page 2)



Four of the five members of the Brookhaven flight crew for the NEROS Project are (left to right): Bob Garber, Bob Brown, Cy Fink, and Dan Leahy. Not appearing here is Mary Phillips. Only two researchers fly together at a time, along with the plane's pilot and copilot.

NEROS Program Takes Off

Airborne research is not new to Brookhaven; since 1977 BNL scientists have been studying air pollution patterns under programs such as the Multi-state Atmospheric Power Production Pollution Study (MAP-3S). Brookhaven atmospheric research continues in the month of August with our participation in the Northeast Regional Ozone Study (NEROS). Unlike the MAP-3S program, which primarily studied sulfur pollutants, the NEROS project will focus mainly on atmospheric ozone distribution patterns.

Although the study is being conducted under the sponsorship of the Environmental Protection Agency, Brookhaven is extensively involved in the research in two fundamental capacities, explained Bob Garber, the principal BNL investigator on the project. Brookhaven will be providing the Lab's aircraft and all the personnel involved in its operation, and will operate the aircraft control station on the ground.

The operation will work like this: the aircraft will be in constant communication with the control station in building 51. There, a meteorology team, consisting of Gil Raynor, Robert Brown, and Arthur Tingle, and equipped with communications equipment to provide up-to-the-minute meteorological conditions throughout the Northeast, will direct the plane exactly where to fly. "The whole thing is based on meteorology," says Garber, "What winds are blowing, where the winds are expected to come from, what their speeds will be, things of this nature." The flight control center uses a computer to establish a flight pattern which includes locations, times and altitude. Garber says "we don't just go out and fly; we have to get the proper wind conditions in order to conduct the experiments."

The flight crew, consisting of Garber, Cy Fink, Dan Leahy, and Mary Phillips, will attempt to follow an air mass as it comes out of the Midwest. "Generally," explained Garber, "Most of the flights are going to be conducted over the state of Pennsylvania. It is a relatively large state, and is on the western boundary of the Ohio River Valley where a lot of the pollutants we are looking for originate." While Washington State University will monitor the western half of this area, Brookhaven will be studying the eastern sector.

On board the airplane will be instruments for measuring various species of pollutants, such as NO, NO₂, Ozone (O₃), and SO₂. The equipment is capable of measuring these materials "as the plane intercepts them," says Garber. "We fly through the system, a sample is taken through these instruments and analyzed immediately by them. The data we gather on the aircraft are put on magnetic tape. They're processed here at the Lab, by our meteorological facility and with the (Cyber) 7600 over at Applied Math." Thus, the plane brings back data, not actual air samples, the only exception to this being hydrocarbon samples. The plane does not contain the necessary equipment to analyze hydrocarbons, so samples are taken of the air in front of the plane (to avoid contamination from the plane's engines), brought back to the Lab, and analysed within 24 to 48 hours. After the data have been put into graphical form, they will be further analysed by Joyce Tichler of Meteorology, John Clarke of EPA, and other modeling scientists. "Hopefully," says Garber, "the end result will be an atmospheric model by which we'll be able to predict what the ozone loading in a city like New York will be under given meteorological situations."

The plane itself is a Britten-Norman Islander, a twin-engine, Short Take-Off and landing (STOL) type aircraft which is

well-suited to this type of research. Although the plane is owned by the Mid-Island Air Service, the Lab uses it on an "exclusive-use" lease, so that all the equipment is installed permanently. In addition to the pilot and copilot, who are provided by Mid-Island Air Service, the plane generally carries two Brookhaven scientists.

Ozone Formation

Stuart Levine, a scientist with the Department of Energy and Environment, explained that "one would need something on the order of about 50 reactions to describe the chemistry of ozone formation in the atmosphere." Nevertheless, he says, there are a few simple reactions which can symbolize the most important processes in ozone formation in a general way. The simple scheme would be something like this. First, in a photochemically reactive system such as earth's atmosphere, NO₂ which is in the atmosphere undergoes photolysis (breaking up due to light energy) to yield NO and atomic oxygen. This atomic oxygen (O) can then react with molecular oxygen (O₂) to form ozone (O₃). Then, the ozone and NO can react to reform NO₂ and molecular oxygen. These three basic steps may be summarized as follows:

- 1) NO₂ + hv (light) → NO + O
- 2) O + O₂ → O₃
- 3) NO + O₃ → NO₂ + O₂

The crucial element in this reaction scheme is the concentration of NO₂ relative to NO. The higher this ratio, the higher the concentration of ozone in the atmosphere will be.

"Then the real question comes into play," says Levine, "What affects that ratio?" The ratio is generally increased by the conversion of NO to NO₂. The main culprits in this respect are hydrocarbons. Hydrocarbons in the atmosphere form species known as radicals, which can oxidize NO to NO₂, increasing the concentration of the latter relative to the former, and therefore raising the ozone concentration. Hydrocarbons are formed by all the combustion processes man uses, from electric generation plants to automobiles. But even if man did not produce them, there would be a certain natural level of hydrocarbons in the atmosphere. They are produced by plant life; evergreens in particular produce a "considerable amount," says Levine. "So I don't think the earth's atmosphere will ever be without any ozone," says Garber. "The question is, what is this natural ozone level?"

The first people who will actually use the data generated by the NEROS program will be the modeling scientists at the Environmental Protection Agency. They will try to develop guidelines for such areas as what the natural ozone levels are, how far actual ozone levels should be allowed to deviate from these natural levels, and how best to control ozone precursors in the atmosphere. "What EPA wants to assure themselves of," says Garber, "is that they have realistic levels in terms of what the ozone concentration would be anyway, and then how best to control the man-induced changes which affect it." —Bradley Stolzer



The Brookhaven research plane in flight above Manhattan.

Ozone: Good And Bad

In discussing ozone, it is important to distinguish between the two roles the compound may play in our atmosphere; it can act as either dangerous pollutant or vital protector of life. The distinction is determined not only by the amount of ozone present, but also where it is present. In the lower atmosphere, ozone is considered a pollutant; this is the ozone that is the target of the NEROS Project. It is the main constituent of the nasty stuff we know as smog. But the ozone found up in the stratosphere is a different matter altogether. There, a certain, natural level of ozone is not only normal, but essential. This is because ozone absorbs a great deal of potentially harmful ultraviolet radiation. "That ozone shield," says Garber, "is what's potentially keeping life on this planet as we know it alive."

This is why many people became concerned about the Supersonic Transport when it was determined that it would contribute high levels of NO to the atmosphere when flying at supersonic speeds. The NO would combine with ozone to form NO₂ and molecular oxygen, thus depleting the ozone concentration.

Similarly, the use of chlorofluorocarbon (CFC) propellants in aerosol sprays was halted last year because of a series of reactions believed to take place which would also deplete ozone. In this case, the distinction between the upper and lower atmospheres played a big functional role, explained Levine: the CFC propellants were "pretty inert in the lower atmosphere. They didn't really react with anything, they just sort of diffused up to the upper atmosphere." When they got there, said Garber, the high-energy ultraviolet light would "tear the chlorine atom off the molecule." The chlorine then behaved similarly to the NO described above; it would react with ozone to form ClO and molecular oxygen, again depleting ozone. Manufacturers have since switched to propellants such as CO₂ or propane.

—Stolzer



Stephanie O'Grady solders sections of stained glass to create one of her leaded stained glass designs.



Tomiko Horii is an expert at Japanese floral arrangements.

The Crafts People
and Their Exhibits



Phil Miller carves birds and waterfowl.



Stephanie Morris cards fleece which she will spin into yarn. In the background, Debbie Rothman demonstrates the fine art of calligraphy.

Colorful Crafts

Don't forget to catch the first BNL employees Crafts Exhibition before it closes at noon on Tuesday, August 14. The show, sponsored by BERA, includes over fifty exhibits created by employees and displaying a wide range of talents. Besides the crafts pictured here, the Exhibition contains examples of weaving, quilting, pottery, leather, and some unusual art forms as well. Two of the show stealers are models. One, by Per Dahl, is an unfinished scale model of the *U.S.S. Constitution*. Constructed of hull planking spruce, deck planking bass, and birch, the builder has already spent some 2000 hours on the intricate model, and he's only half finished. Equally impressive is the other model, a 1:10 scale replica of a Dutch steam locomotive. The locomotive contains a working boiler and actually runs, although the builder, Tom Oversluizen, is reluctant to run this one because the coal needed to do so soils its beautiful finish. The exhibition is in Berkner Hall and will be open from 9 to 5 until Tuesday.

Theatre Group Tryouts

The BERA Theatre Group will hold tryouts for a fall production of "Otherwise Engaged," an award-winning contemporary comedy by Simon Gray which played on Broadway and in the West End of London a couple of seasons ago. Interested, aspiring players are invited to audition either Monday, August 13, or Wednesday, August 15, at 8 p.m. in Berkner Hall.

Cafeteria Menu

Week Ending August 17, 1979

Monday, August 13	
Tomato vegetable soup	(cup) .30 (bowl) .40
Macaroni and cheese & 1 veg.	1.15
Grilled ham steak & 1 veg.	1.45
Hot Deli - Pastrami	(on bread) 1.30 (on roll) 1.40
Tuesday, August 14	
French onion soup	(cup) .30 (bowl) .40
Vegetarian omelette & fr. fr.	1.25
Meatloaf and hash browns	1.30
Hot Deli - Corned beef	(on bread) 1.40 (on roll) 1.50
Wednesday, August 15	
Pepper pot soup w/spaetzle	(cup) .40 (bowl) .50
Tuna noodle casserole	1.25
Southern fried chicken w/corn friters	1.35
Hot Deli - Veal pattie & peppers hero	1.30
Thursday, August 16	
Chicken noodle soup	(cup) .30 (bowl) .40
Pork and cabbage crisp	1.35
Manicotti and 1 veg.	1.25
Hot Deli - Baked Virginia ham	(on bread) 1.30 (on roll) 1.40
Friday, August 17	
Manhattan clam chowder	(cup) .40 (bowl) .50
Fish filet cheese melt & 1 veg.	1.40
Hot chili con carne w/corn bread	1.40
Hot Deli - Sandwich steak	(on bread) 1.40 (on roll) 1.50

Reports Available

The following reports are now available to the Laboratory Staff and to Affiliates of the DOE, AUI, and NRC. Others may purchase the reports from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. Staff members should call Ext. 3484.

BNL-50829	\$4.50
The Longitudinal Coupling Impedance Of A Double-Step Cross Section Change In the Vacuum Chamber. P. Guidee, et al	
BNL-50836	\$6.00
Less Developed Countries Energy System Network Simulator LDC-ESNS. A. Reisman et al	
BNL-50841	\$5.25
The Endangered Species Act And Energy Facility Planning: Compliance And Conflict. D. Shreeve, et al	
BNL-50854	\$4.00
Solidification Of Simulated Transuranic Contaminated Incinerator Ash Wastes Using Portland Type 1 Cement. R.M. Neilson, Jr., et al	
BNL-NUREG-50859	\$5.25
A Single-Phase Pump Model For Analysis Of LMFBR Heat Transport Systems. I.K. Madni, et al	

A Puzzler:

The Birthweek

Alf, Bert, Charlie, Dougie, Ernie, and Fred have their birthdays on consecutive days, but not necessarily in that order.

Dougie's birthday is as many days before Alf's as it is after Fred's. Charlie's birthday is as many days before Fred's as Bert's is after Fred's. This year Ernie's birthday is on a Saturday.

On what day of the week do the birthdays of the other 5 men fall this year?

The solution will be found elsewhere in this issue. If you need to know how it was arrived at, a copy of the explanation can be had by calling Ext. 2345.

—from *A Diversity of Puzzles* by E.R. Emmet. Reprinted with permission from Harper & Row, Publishers, Inc.

Arrivals & Departures

Arrivals	
Enrique E. Abola	Chemistry
Rodolfo A. Alforque	Accelerator
Bettie L. Evans	Biology
Theodore J. Krawiec	Energy & Env.
Gary L. Krieger	Safety & Env. Prot.
Brian J. Morris	Accelerator
Gary E. Struve	Chemistry
Ashok N. Vaswani	Medical
Departures	
Sharon Dobbs	Nuclear Energy
Mark E. Hofmann	Instrumentation
Laurie H. Rhodes	Applied Math.
Laurie B. Sweeney	Nuclear Energy
Robert M. Tomacheski	Plant Engrg.
Leonard Katcher	Plant Engrg.

French Film Coming Up Robot

(Cont'd)

The film "Mr. Hulot's Holiday" (*Les Vacances de M. Hulot*) will be shown in Berkner Hall at 8 p.m. on Tuesday, August 14. The movie is being sponsored by *Le Cercle Francais de BNL*, which invites all members of the BNL community and their friends to attend. Those who are not members of The French Group of BNL will be asked for a donation of \$1.50 (75¢ for students).

This film, released in 1953, was the first great success of its director and star, Jacques Tati. The plot is minimal - Hulot arrives in his broken-down jalopy to spend his vacation at a slightly seedy seaside resort in Brittany. As is usual in a Monsieur Hulot film, Murphy's Law applies: Anything that can go wrong, does. Unlike real life, the consequences of this are always hilarious. Tati's film style reminds one of the early silent films, with one sight gag piled upon another to produce a crescendo of laughter. The sound track is a polyglot mixture of French, English, and the unrecognizable language one hears in transportation terminals, but the dialogue is not really important. Beneath the surface of Tati's comedy lies a foundation of keen observation and pointed social comment.

Just about one year ago, a large and appreciative audience in Berkner enjoyed Tati's "Playtime." This film is thought to be even better and funnier.

crisis point was reached on Saturday when supplies of rolls for hamburgers became dangerously low and had to be replenished from local groceries. On Sunday with the extra supplies used up, the final resort was to serve hamburgers on plain bread.

Bus drivers were constantly on the move, most of the time with standees, and riding with doors and windows open to try to beat the heat. On Saturday, the problem was to avoid getting drenched by the torrents of rain, and many times a tour guide would enter the bus soaking wet from running through the rain from one group to another. At the height of Saturday's storm, the thunder and lightning provided the background of a seeming intergalactic war for the performance of R2D2 and Darth Vader.

Tomorrow and Sunday, although R2D2 will be off on other business, visitors can expect to see Darth Vader once again leaping out of the dark corners of the Exhibit Center.

Microprocessor Club

The Microprocessor Club meeting will not be held on Tuesday, August 14. However, on Tuesday, August 28, an engineer from Motorola will present a detailed talk on the 6800 and 6809 from 9 a.m. to 12 noon, and on the 68000 from 1:30 p.m. to 5 p.m. in the Hamilton Seminar Room, Chemistry Building.

Nursery School

A few places are left in the four-year-old classes of the Upton Nursery School. Both two-day and three-day sessions are open. For information, call the enrollment chairperson, Kassie Ruth, 744-2444.

Solution To Puzzler
Alf's birthday is on a Sunday.
Bert's birthday is on a Thursday.
Charlie's birthday is on a Tuesday.
Dougie's birthday is on a Friday.
Ernie's birthday is on a Saturday.
Fred's birthday is on a Wednesday.

BROOKHAVEN BULLETIN

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No Gas Required



Phil Borzi, head of Supply & Materiel, checks over some of the 100 bikes that came into the warehouse in July. Because of the energy crunch, they are one of the hottest items that his division handles, says Borzi, "and right now, we have about 150 back orders." The men and women's bikes that have been purchased are both the conventional "no speed" bikes and the 3-speed variety. Bikes may be ordered by the departments, through an ILR with the proper signature authorization. —photo by Humphrey

Service Awards

The following employees will receive service awards during the month of August, 1979:

Thirty Years

Fredrick H. Kuhn.....Accelerator
William A. Rogers.....Contracts & Proc.
Charles F. Ruege.....Nuclear Energy
Frank J. Rumph.....Physics

Twenty-Five Years

John L. Batdorf.....Safety & Env. Prot.
Marilyn H. McKeown.....Physics

Twenty Years

Joseph Bauernfeind.....Accelerator
John G. Bennett.....Plant Engrg.
Mary A. Hughes.....Accelerator

Ten Years

Ruth Faine.....Applied Math.
Kenneth P. Mohring.....Medical

Summer Rec Program

On-Site Program

At last Friday's "Olympic day" a program of many races and contests kept the children busy for two strenuous hours. Victors included: Marathon Race - Jeremy Rothman, Leah Lande, Steve Monna; 40 Yd. Dash - Keita Okumura, Leah Lande, Steve Monna; Softball Throw - Brian Glashow, Evan Christenson, Jason Glashow; Discus Throw - Stephan Richner, Leah Lande, David Lande; Long Jump - Katherine Hampel, Doug Kirsch, Rinar Schachner; Wheelbarrow Race - Mina Inone/Eva Markovits, Doug Kirsch/ Evan Christenson, Ronen Arbel/Stephan Monna.

This week's special - Halloween Day.

Next Thursday at 5:00 p.m. for children and their parents - International Picnic.

Next Friday - Carnival Day.

Swimming Pool

Everyone went home happy from last Friday's special, which featured relay races. The winners were:

4-6 year olds

Kevin Byrne, Dennis Byrne, Yuvall Arbel.

7-9 year olds

Karen Ingoglia, Lisa Kantor, Einat Arbel.

10 years and older

Merissa Holden, Greg Holden Megan Holden, Rusty Mills

This week's special - ping-pong ball/spoon and cup races.

Next week - balloon races.

Tennis

Despite the heat and threatening rains, Coach Ingoglia's tennis tournament has been under way this week with many exciting matches. Winners will be announced in next week's Bulletin.

Football

Football season is almost here again. For those who are not aware, BNL has a Touch Football League. The games are played at the BERA Recreation field on Monday and Thursday evenings at 5:20. The season runs from the beginning of September to the end of October. There is no blocking, and limited body contact, so all ages can play with little fear of being injured. Game rules and entry blanks can be obtained at the Film Service Office located in the Cafeteria. New teams are welcome. If you do not have a team but want to play, we have a player's pool. For further information contact Ed Taylor at Ext. 4126.

Softball

League I

Sweathogs 13 - Ravens 6

Phoubars 14 - Strikers 5

Blue Jays 7 - Source I 4

Six Pax 9 - Old Timers 5

League II

DEEgenerates 14 - Dirty Sox 5

Titans 9 - Cardinals 8

AMD Bombers 27 - Charlie Browns 3

ROGA 14 - Source II 5

League III

Big Sticks 27 - Nuke Powers 13

Moles 31 - Binary Bombers 1

Mixed League

Turkeys 11 - TNT 4

Random Sample 13 - Confoozed 12

Who's On First 8 - Diamonds 7

Oh Kays 7 - E-Z Riders 4

Bicycling

The BNL Fall race is scheduled for Sept. 9, only a month away. Better start your training now - and don't forget to buy a helmet.

The Suffolk Bicycle Riders Association August schedule consists in part of their standard 20 mile Saturday rides, starting at 10:00 a.m. at Georges Bicycle Shop, Nesconset Hwy. at Stony Brook Rd. or Carl Hart Bicycles, Middle Country Rd. in Middle Island at the same time.

In addition there are three Sunday rides, all at 10:00 a.m. The one on Aug. 12 is to Sunken Meadow State Park; 35 hilly miles starting at the Smithtown Public Library. On Aug. 19 there's a choice of 20, 40 or 60 miles starting at George's Bicycle Shop, and on Aug. 26, a "women only" ride from George's Bicycle Shop. BNLe's are welcome on all rides. Contact Bob Monaghan, Ext. 4824/4688 or 744-5098 for additional info.

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position, with consideration given to candidates in the following order of priority: (1) present employees within the department, with preference to those within the immediate work group; (2) present employees within the Laboratory as a whole; and (3) outside applicants.

The determination of the best-qualified candidate for available positions will be based upon education, experience and other job-related criteria. Such factors will be evaluated and measured against the demonstrable requirements of the available vacancy, as well as the Laboratory's Affirmative Action objectives.

The Laboratory is committed to a policy of Equal Opportunity in its selection and placement of personnel. Its objective is equality of opportunity in employment, training, and promotion without regard to race, color, religion, national origin, sex, age or handicap.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all nonscientific staff positions; second, to give employees an opportunity to request consideration for themselves through Personnel; and, finally, for general recruiting purposes. Because of the priority preference policy stated above, each listing does not necessarily represent an opportunity for all candidates. As a guide to readers, the listings are grouped according to the anticipated area of recruitment, as indicated below. Except when operational needs require otherwise, positions will remain open for one week following publication date.

For further information regarding a placement listing, contact the Personnel Placement Supervisor, Ext. 2882.

LABORATORY RECRUITMENT: Opportunity for present Laboratory employees.

1058. STAFF ASSISTANT (or SR. STAFF ASSISTANT) - Requires BS in business administration and several years of financial administration experience or the equivalent ability to perform budget, manpower, and procurement planning, control, and computerized reporting for technical or engineering projects. Will assume responsibility for administering the budget for NSLS project. Physics Department.

1059. SECRETARY - Requires AAS in secretarial science or equivalent experience performing general secretarial duties and ability to type technical reports. Will organize and type technical reports, expedite travel arrangements, and process administrative reports for two nuclear energy systems groups. Department of Nuclear Energy.

OPEN RECRUITMENT: Opportunity for present Laboratory employees and outside applicants.

1060. ENGINEERING ASSOCIATE - Requires BS/MS in nuclear engineering, material science or chemical engineering or equivalent experience identifying and measuring properties of solidified low-level power reactor wastes. Ability to prepare and write technical reports is highly desirable. Will evaluate solidification agents, processes, and techniques for waste management research group. Department of Nuclear Energy.

1061. SYSTEMS ENGINEER - Requires BS/MS in engineering, economics or energy policy analysis or equivalent ability to develop computer models and perform analysis of alternative energy systems. Will organize, analyze, and interpret energy data and prepare technical reports for the building conservation group with National Center for the Analysis of Energy Systems. Department of Energy and Environment.

1062. ELECTRO-MECHANICAL TECHNICIAN - Requires AAS or equivalent with ability to assemble components carefully. Background in computer operation or electronics desirable. Will be involved in assembly and test of ISABELLE magnets. Occasional shift work. ISABELLE Project/Accelerator Department.

Autos & Auto Supplies

77 CAMARO - a/t, a/c, AM/FM, ps/pb, excel cond. Glenn, Ext. 4217, 928-7619 eves.

70 FORD MAVERICK - a/t, 19-23 mpg, good cond. \$250. Tom, 286-1899.

AUTO PARTS - Plym, Chrysler, tires, radiator, water pump, seats, etc; call for the part you need. 924-0960 after 5.

73 GMC PICKUP - h.d. 1/2 ton, tool box, spares, must sell. Julie, Ext. 2942, 929-6460.

68 OLDS CUTLASS - ps/pb, radio, good tires, runs very well. \$300. Irene, 589-6468 after 5.

69 FORD - 390 ci eng, good cond. \$175. Ext. 4539.

75 HONDA CB500T - 9000 mi, 2 helmets, excel cond. 281-5710 after 4.

TIRES - new, used, rims, repairs, Gillette, BF Goodrich, mag wheel service. F. Usack, Ext. 4798 lunchtime.

74 SUBARU DL STA WGN - new clutch, batt, AM/FM cassette, radials & snow radials, front w/d. \$2000. Jerry, Ext. 4324, 724-0470.

SHOP MANUALS - 69 Ford Sta Wgn Vols I thru V. \$5. Pat, Ext. 4255.

72 MERCURY STA WGN - 351 ci, ps/pb, a/t, towing pkg, roof rack, good cond, a/c. \$650. 821-0695.

AM RADIO - Audiovox pushbutton new car radio. \$18. Ext. 4532, 277-4091.

73 FORD CUSTOM - 4 dr sedan, V8, a/t, ps/pb, 1 owner, 20,800 mi, w/snows on wheels. \$1200 firm. Fran, Ext. 3379, 589-3485 after 6.

Tour Features Inorganic Photochemistry

This weekend's mini tour will feature the Inorganic Photochemistry Group of BNL's Chemistry Department. This group is doing research on chemical reactions that can use sunlight to produce stable high-energy products. Recently, they successfully used solar energy to decompose water to hydrogen gas, a first step in designing systems that may one day produce hydrogen fuel using water and sunlight. Visitors will receive a more detailed explanation of the chemical reactions involved and learn about other BNL research on photochemical reactions.

In addition to this weekend's mini tour, visitors will view the 15-minute slide show entitled "Brookhaven's Quest" at Berkner Hall, take a guided bus tour of the Lab, and visit the Exhibit Center.

