BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Warren Winsche, Deputy Director, Dies

Warren E. Winsche, Deputy Director, died on June 19 following a brief illness. He was 66 years old.

In making the announcement to employees, Laboratory Director Nicholas Samios said that "Warren served the Laboratory well and wisely during his many years at BNL. He was a distinguished, kind, and generous man. His counsel and sound advice was universally sought and freely given. He leaves a vacuum which will be hard to fill."

Winsche's career included more than 25 years in research and administration at the Lab, as well as ten years in management positions at the DuPont Company.

He first came to Brookhaven in 1946 to head the Pile Engineering Division where he was involved with the design of the Brookhaven Graphite Research Reactor and the Hot Laboratory. He originated a novel split-flow cooling concept, which was used to scale up the power of this reactor by a factor of about ten over previous designs. During this period, he also originated the method by which radioiodine is commonly produced (from Te-I generators).

In 1951, Winsche left Brookhaven to join the Atomic Energy Division of E.I. duPont de Nemours, as Senior Research Supervisor and later Research Manager of the Chemical Separations Engineering Division at the Savannah River Plant. Here, he conceived, developed and moved into dependable use a number of innovative chemical processes for separating constituents of the fuel elements irradiated in the Savannah River production reactors. These now constitute a standard library of chemical techniques used at Savannah River.

Winsche returned to Brookhaven in 1962 as Chairman of the Nuclear Engineering Department, which later became the Department of Applied Science. He held that post until 1975, when he was appointed Associate Director for Energy.

During these years he developed a broad base of energy-related programs. They included energy systems analysis, reactor safety, nuclear materials safeguards, atmospheric sciences, coastal oceanography, and energy materials development. Winsche also originated the concept of the use of metal hydrides as a means of storage of hydrogen, and concepts for advanced fuels and fuel management for liquid metal fueled breeder reactors.

One of those who worked closely with Winsche for many years and who appointed him Deputy Director in 1979, was former Director George Vineyard. Vineyard said "Warren Winsche was a brilliant scientist and engineer, notable for his originality and creativity. These qualities also made him unusually effective as a scientific administrator. He had a keen sense of scientific excellence and recognized and encouraged those programs that would achieve important results and bring distinction to the Laboratory."

And his long-time friend and colleague, Herbert Kouts, Chairman of the Nuclear Energy Department, observed that "Warren was a rare combination; a superb scientist and a profound student of human nature. He loved problems in science and in personal interrelations. He specialized in developing solutions that bore his personal stamp — insight, originality, and pragmatism."

Warren Winsche was born in Brooklyn on January 26, 1917. His academic training was in chemical engineering: a B.S. from Polytechnic Institute of Brooklyn (1939); an M.S. from the University of Rochester (1940); and the Ph.D. from the University of Illinois in 1943.

From 1943 to 1945 he was a member of the National Defense Research Council working at the University of Illinois and Edgewood Arsenal. In 1945 he entered the field of atomic energy as Group Leader for Chemical Processes at Clinton Laboratory (now Oak Ridge National Laboratory).

For his important contributions to engineering, Winsche was elected to the National Academy of Engineering in 1982. He was a fellow of Polytechnic Institute of New York, the American Nuclear Society, and the American Association for the Advancement of Science.

Winsche served on the Board of Advisors of the Long Island Forum for Technology. He was a member of the Regional Marine Resources Council of the Long Island Planning Board, and the Advisory Council for CREATE (Center for Research and Education to Advance Technological Enterprise).

Warren Winsche

He is survived by his wife, Mary Ann, of Bellport; three daughters, Elizabeth Ann of Fredericton, New Brunswick, Martha Jean of Holland, Michigan, and Barbara Ellen Mitarotondo of Huntington, Connecticut; and two brothers, Raymond of Brooklyn, and Elbert Wunsche of Nesconset, New York.

Services will be held today at 4 p.m. at the Unitarian Fellowship of the Three Villages, Setauket.

A memorial fund in Dr. Winsche's memory is being created at the Polytechnic Institute of New York, for the encouragement of women in engineering. Contributions may be sent to the Warren Winsche Memorial Fund, P.O. Box 294, Bellport, N.Y. 11713.

UNICON Advances Nuclear Medicine

Since the discovery of x-rays in 1895, medical researchers have sought to improve their tools for looking inside the living body. One of the latest efforts in this direction is the UNICON.

Although its name is suggestive of the fabulous one-horned creature, the UNICON is not mythical. UNICON is actually an acronym for Universal Nuclear Imaging Construct, an instrument that has begun to make very real contributions to nuclear medicine.

"The goal of nuclear medicine," said A. Bertrand (Randy) Brill, head of Nuclear Medicine in the Medical Department, "is to be able to test the functional performance of organs, rather than just the location, size and shape of an organ."

Even defining location was difficult for conventional x-rays. This improved, however, with the development of CAT scanners, or computerized axial tomographs. Using detectors, the CAT measures the attenuation of rays of radiation as they pass through a body, then produces a tomogram — a graphic display that is the equivalent of taking a slice right through the body.

Although CAT scanners can locate an organ, they generally yield no information about how the organ is working. Functionally, CAT scans for both a living and dead organ may be identical. No so with the UNICON, which produces tomograms that colorfully highlight the various metabolic rates in an organ to allow a determination of its function.

Unlike CAT scans, which rely on an external source of radiation, the UNICON produces images from a radiation source inside the subject's body. After injection, these short-lived radioactive compounds bind to the molecules of a particular organ, as iodine is taken up by the thyroid. The speed with which that happens is a measure of the organ's functional performance.

While some other instruments can also produce functional images, the UNICON is unique in several respects. The first word in its name — universal — explains part of the instrument's uniqueness. The UNICON can produce images by detecting either single gamma emitting radionuclides, in a technique called single photon emission computer tomography (SPECT), or pairs of photons (in coincidence from positron emitters), in a method known as positron emission tomography (PET).

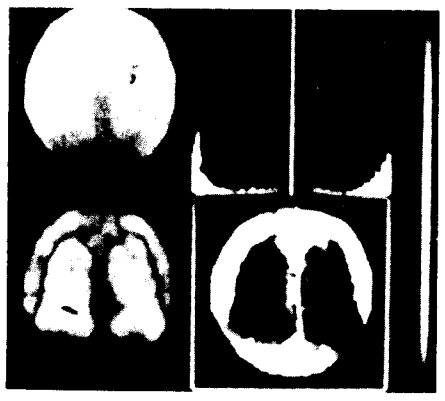
"With the ability to operate in both the PET and SPECT modes, the present setup is really a tool for developing concepts in nuclear medicine." said Gerald Bennett, who heads the group responsible for creating the UNICON. "In later generations, some aspects of this machine, if not this machine iself, will certainly find clinical applications." Here are some of those aspects:

• **Flexible mounting** — Images are produced by two large, opposing, field-of-view scintillation cameras

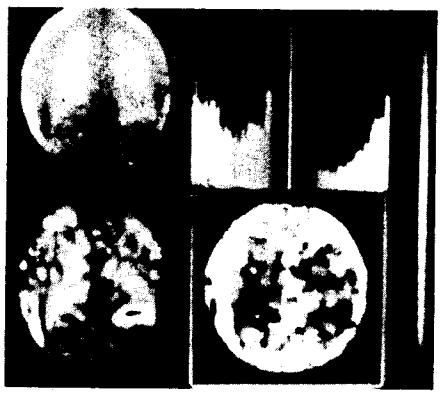
(Continued on page 3)

Mort Rosen

The UNICON crew checks the operation of their instrument. The two scintillation cameras are adjusted so that the lower unit views activity in the lungs from an inspired gas and the upper detector maps the activity circulating in the brain. Randy Brill serves as the subject while Gerry Bennett positions the cameras. (From left) Yves Bizais and George Zubal observe from the console, while Wanda Rowe takes notes.



Typical of the images produced by the UNICON, these figures are composed of thousands of individual picture elements (pixels) derived from digital information. The lungs of a normal subject are imaged above; those of a coal miner with diffuse disease appear below. The upper left quadrant of each figure shows conventional nuclear medicine images of the lungs. The UNICON combines such images with measurements of the air going in and out of the subject's lungs, then processes these data to show, for each pixel, the maximum change (lower left) and the phase relative to the overall breathing cycle (lower right). The upper right quadrant shows the relative frequency for each phase interval. Note that the diseased lungs exhibit a decided phase lag and a broader range of phases than do the healthy lungs.



Inside Info

Richard Casten, Group Leader of Neutron Nuclear Measurements, Physics Department, has received a Senior U. S. Scientist Award from West Germany's Alexander von Humboldt Foundation. He was nominated for the award by Peter von Brentano, University of Cologne, and Cologne will be his home base during a year-long stay in Germany.

Humboldt awards are given each year to about 80 American scientists who have gained international reputations in their fields. Winners may carry out research of their own choice at West German research institutions and they also receive a generous cash award.

Casten's research will focus primarily on the study of low energy collective excitations in nuclei, with principal emphasis on tests of the Interacting Boson Approximation (IBA) model. This model has been remarkably successful over the last several years in interpreting the structure of nuclei with even numbers of protons and neutrons. Casten will test the predictions of the model for odd mass nuclei, and, in particular, will search for evidence of the existence of supersymmetry.

At the recent annual meeting of the American Nuclear Society, **Walter Kato**, Deputy Chairman of BNL's Department of Nuclear Energy, was elected Chairman of the Society's Division of Nuclear Reactor Safety. He will head the 2700-member division for a term of one year. This division acts as a focus for all safety issues coming before the Society, carries out studies and writes position papers on nuclear safety, and sets up technical programs for topical and national meetings of the ANS.

At the same meeting, **Melvin Levine**, Associate Chairman responsible for the Reactor Safety Licensing Assistance Division of DNE, was one of 20 members elected an ANS Fellow.The membership of the Society now stands at about 13,000. His citation stated that "his deep understanding of basic physical phenomena and a broad knowledge of mathematics and computer science, have enabled him to contribute to our understanding of reactor physics and thermal hydraulics and to the improvement of the safety, design and performance of nuclear reactors."

Speaking Out

Reporter: Steven Eisenberg
Photographer: Mort Rosen

What do you do if you can't sleep? It seems that a lot of people don't have any trouble sleeping. Of those who do, a goodly number read. Here are some other solutions.

Joe Tuozzolo (AGS) — I have no trouble sleeping at night.

Jonathan Miller (Applied Science) — I listen to my stereo with my headphones.

Linda Woodson (AGS) — Exercise.

Matt Laudato (NSLS) — Sometimes I'll take out my guitar and play, sometimes I'll read, sometimes I'll watch TV and sometimes I'll eat.

William Harold (Medical) — Lie awake and cuss.

Colin Stewart (Applied Math) — It all depends on the reasons why I can't sleep. Maybe get up and read a book... If you have a problem bothering you, maybe a couple of good drinks will fix you up.

Neil Baggett (Director's Office) — I haven't been sleeping all week. And I can't think of anything to do. But I got a good suggestion today. A friend of mine told me what he does is listen to short wave radio. He suggested that if I get a short wave radio, I listen to a foreign broadcast. He finds the Indian language will do best.

Marvin Laster (DOE) — I generally listen to talk shows on the radio. Or I count lost opportunities until I fall asleep.

Arthur Coone (Supply and Materiel) — I get up and have a beer. Or watch TV.

Doug Humphrey

Richard Thomas and the computer's "voice box."

When The Computer Talks... People Listen

"Warning. Warning. Warning. The helium density is too low to apply voltage. The interlock has been opened."

The words are from a nine month old Intex-Talker, a voice synthesizer available commercially for $300, which is connected to both a speaker on a control room wall and to a Hewlett-Packard series 200 model 36 desk top computer. Sitting in front of the screen is Richard Thomas who is demonstrating the monitoring system he has programmed for the Power Transmission Project.

Testing of the project's superconducting cables began in October, 1982, after nine years of preparation. And if all the tests, including a surge of lightning, are successful, the cables may be in actual use by 1990, and large amounts of power could then be transmitted underground, for example, from a generating site upstate to New York City.

"I'm involved with all the data processing that tells us how the cable itself is operating, such as the temperature, the refrigeration, and the pressure and flows as well," says Thomas, referring to the helium gas which cools the stainless steel-jacketed cables. "The computer has temperature, pressure and flow sensors throughout the system which it checks every 20 minutes."

And if there is a malfunction — the temperature is too high to support the high voltage; the vacuum (needed to reduce heat convection) isolating the cables deteriorates; the refrigerator is no longer supplying 130 gallons per second of helium; the temperature of the turbines in the refrigerators increases; or the helium density, indirectly computed from pressure and temperature readings throughout the 100 meter long cable system, decreases — the computer talks. Buzzers and lights could have been used, but their cost is comparable to a Intex unit.

"An operator working at three in the morning also needs a distinguishable message in order to react to a problem. And speech synthesis as an alarm system is much better than any other warning," says Thomas.

The talker has a microprocessor which breaks down the warning messages into words. An algorithm then converts the words into sound units called phonemes of which 64 can be generated by the unit. The rate and pitch of phonemes can also be varied unlike the earlier Radio Shack model voice synthesizer which also required each phoneme to be programmed individually.

Thomas' idea for verbal warnings came from a technician. "I was showing him all the capabilities of the monitoring system when he asked, 'But can it talk?' "

Now it can. And in a few months, it may even be calling control room operators at home if the system malfunctions. Or if everything is functioning smoothly, and if the time is right, it may sing, "Everything is beautiful..."

— Steve Eisenberg

(Eisenberg is a summer student with the Public Relations Office).

Save Those Boxes

Boxes of supplies and equipment are delivered every day by offsite suppliers, and the Laboratory spends several thousands of dollars annually to buy boxes for the delivery of material from our stockrooms. But once the boxes have been emptied of their contents, they are generally thrown out.

But now, as a result of an employee suggestion, corrugated boxes are being collected and recycled for a three-month trial period. The program went into effect on Monday. Empty containers, such as Xerox paper boxes and computer paper boxes, are to be deposited in building stockrooms, or at whatever location Supply & Materiel drivers normally deliver packages.

Corrugated boxes can be used several times before being discarded, and employees are asked to cooperate in making this program a success.

Express Mail at PO

Effective July 5, the Upton Post Office has been given extended service for express mail pickup from the Laboratory for the summer months. The pickup will be at 4:30 p.m., and those wanting this service must have their mail at the BNL mailroom by 4:15 p.m. For further information, call Officer-in-Charge Ralph Persson on Ext. 2539.

IBEW Meeting

Local 2230, I.B.E.W., will hold its regular monthly meeting on June 30 at 6 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, the President's report, and report of the negotiations committee.

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UNICON (Cont'd)

mounted on a rotating frame. By moving the gantry, the cameras can be placed in almost any position to image a large part of a subject's body.

• **Dual 7 pinhole collimators** — In this mode, seven projections of the distribution of activity are imaged by each camera. When the detectors are mounted with perpendicular axes, this feature adds a large degree of stereoscopy not available with only one detector or fewer pinholes. "This allows us to reconstruct a three-dimensional map of the radionuclide distribution within the body, and is especially useful for studies of the time course of the activity," said Bennett.

• **Multi-parameter digitization** — While imaging a particular part of the subject's body, the UNICON can also capture the energy for each event imaged. The data generated from an electrocardiogram, a breathing waveform, or other events can be put in digital form and added to the data stream in a process called physiological gating. The timing of each datum is known to within a fraction of a second, and radioactivity outside the field of view of the cameras can be monitored by the use of auxilliary detectors whose output is fed into the data stream.

• **Interface to a powerful computer environment** — The data collected in the imaging area is relayed through an interface to a DEC-PDP 11/34 minicomputer which serves as an input/output processor and is linked by the DECNET computer network to a shared VAX 11/780. After processing in this huge computer, the data is sent back to the smaller one where the distributions are displayed, and the images and data sheets are produced.

This sophisticated setup, which is funded by the Department of Energy, began operating in January, after the UNICON crew had devoted almost a year to its commissioning. Since then, the team has been busy conducting a variety of tests, employing all the unique features of the UNICON, on both humans and laboratory animals.

A typical development recently realized with the UNICON is the generation of a sequence of transverse projections through the lungs at successive intervals in the respiratory cycle. When displayed sequentially on the computer monitor the viewer sees the motion dynamics of breathing for that slice through the lungs. Similar sections through the heart have been studied where the reconstruction uses only events at maximum inspiration to remove blurring of the heart image due to breathing motion.

In addition to Bennett and Brill, (originator of the dual 7 pinhole idea) the UNICON owes its existence to Yves Bizais, a visiting physician from France who did most of the software development for the dual 7 pinhole tomography; technician Ron Dobert; Wanda Rowe and George Zubal, the two physicists who have developed the bulk of the applications; and K. I. Kim, a graduate student at SUNY Stony Brook. — Anita Cohen

Tennis

The annual tennis tournament, consisting of five events (mixed, m&w singles, m&w doubles) will begin the weekend of July 23. The tournament will take priority over all other play during the weekends of July 23 and July 30. Competitors may sign up at the BERA Sales Office, June 27 to July 12. The draw will be posted by July 15 at the BERA Sales Office and at courtside. Competitors are encouraged to play first round matches as soon as the draw is posted. The tournament is open to Laboratory employees and spouses, and the entry fee is $1.50 per person, per event, payable at sign-up.

A satellite tournament will be organized later for first-round singles' losers.

Equipment Demo

National Business Products will display its electronic typewriters with word processing features, and photocopiers, next week in Berkner Hall. The exhibit will be held in the lobby on Tuesday, June 28, from 10:30 a.m. - 2:30 p.m.

Mountain Club

The Mountain Club is planning a camping trip at Indian Island County Park on July 15, 16, 17 (alternate weekend July 22-24). Anyone interested in going should call Ken Voska, Ext. 7959, as soon as possible, as a $5 per person deposit is needed to reserve the group site at Indian Island. To make plans for this trip and other Club activities, a meeting will be held in the Brookhaven Center at 5:30 p.m., on Wednesday, June 29.

Diners Note

The Cafeteria will be closed on Saturday, June 25. On that day, snack bar service will be available from 9 a.m. to 2 p.m. at the Brookhaven Center.

Cricket

The Brookhaven International Cricket Club opened the 1983 season with a home game against Staten Island C.C. on Saturday, June 4. In a low-scoring match, Staten Island finally won with a total of 73 runs against a BNL score of 53.

Against the British Veterans Club at Oyster Bay on Sunday, June 19, the Lab team struggled for runs until John Millener came to the rescue with a score of 88 not out, the highest individual total yet recorded by a Lab player. The final BNL score was 140 against a reply by the Oyster Bay side of 97.

Cafeteria Menu

Week Ending July 1, 1983

Monday, June 27

Spinach egg drop soup	(cup)	.65
	(bowl)	.75
Broiled chicken livers & 1 veg.		1.80
Swedish meatballs on egg noodles		1.85
Hot Deli: Roast turkey breast	(bread)	1.85
	(roll)	1.95

Tuesday, June 28

Lentil soup	(cup)	.65
	(bowl)	.75
Salisbury steak & 1 veg.		1.85
Baked ham steak w/orange raisin sauce & 1 veg.		1.90
Hot Deli: Sandwich steak w/peppers & onions	(bread)	2.05
	(roll)	2.15

Wednesday, June 29

French onion soup w/croutons	(cup)	.65
	(bowl)	.75
Seafood platter		2.15
Pork & cabbage on toasted Chinese noodles		1.95
Hot Deli: Chicken cutlet parmesan	(bread)	2.05
	(roll)	2.15

Thursday, June 30

Cream of tomato soup	(cup)	.65
	(bowl)	.75

Fourth of July Special
Broiled top sirloin butt steak w/ mushroom gravy on barbeque sauce
Choice of
Baked beans or baked sweet potato
Corn on the cob or creamed onions
Watermelon or blueberries & cantelope
$3.25

Friday, July 1

New England clam chowder	(cup)	.65
	(bowl)	.75
Beef hash & 1 veg.		1.85
Barbeque fresh ham & 1 veg.		1.95
Hot Deli: Sausage & pepper hero		1.95

Nursery School

The Upton Nursery School will have an enrollment day on Tuesday, June 28, from 11:30 a.m. to 12:30 p.m. in the cafeteria. School activities of this past year will be shown in a slide show. Also, working couples who have children enrolled in the school will be on hand to explain how they are able to participate in the cooperative program offered by the Upton school.

Located on site in the housing area, the school offers morning classes for three and four-year-old children. Applications for the school year beginning in September can be picked up in the cafeteria on June 28. They can also be obtained by calling co-presidents Bob Miltenberger, Ext. 2503, and Donna Miltenberger, 924-0590.

Softball

Scores for Week of June 13

League I
Blue Jays 14 - Six Pax 7
For the Blue Jays, G. Oldham was 4 for 4, Frank Palmeri was 4 for 5, Luis Nieves, Jim Amondola and Dave Hanson were 3 for 4. Hanson also had a home run.
Phoubars 18 - Big Sticks 3
For the Phoubars, John Ingoglia had 4 hits, Richie Parsons, Gary Goldstein, Dave Jensen and Mike Cleary each had 3 hits.
Moles 6 - Ice Pops 4
Ravens 9 - AMD 7

League II
Magnuts 13 - Random Errors 5
Lights Out 24 - Light Source 12
Home runs by Fran Loeb and Gary Netal kept team going.
Medical 3 - Dirty Sox 0
Roga 10 - Titans 9

League III
E-Z Riders 9 - Nads 5
Survivors 15 - TNT 8
No Names 18 - Mole-Esters 11

League IV
Underalls 21 - Who Cares 5
Mudville Sluggers 15 - Who's On First 13
Turkeys 11 - Random Sample 10
Septembers 21 - Spacekadets 3
The Source 28 - No Feedback 8

1982-83 Bowling Champs

PINSPLITTERS (White League): Marge Stoeckel, Joe Ferrante, Elaine Zukowski. (Missing - Gene Fales).

DRAFTECS (Purple League): Ed Sperry 3rd, Irene Sperry, Al Pinelli. (Missing - Joyce Pinelli).

Mort Rosen

APPEL BLOSSOMS (Pink League): Kathy Kissel, Renie Rosati, Maria Apelskog, Carol Beckner. (Missing - Marie Grahn).

DESIGNERS (Red/Green League): Charles Tomesch, Joe Ferrante, Ed Sperry 3rd, Ed Sperry 4th, Al Pinelli. (Missing Ralph Helmig).

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. In keeping with the Affirmative Action plan, selection decisions are made without regard to age, race, color, religion, national origin, sex, handicap or veteran status.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all non-scientific 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.

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: Opportunities for present Laboratory employees.

1897. MAIL CLERK - Staff Services Division

1898. FIREFIGHTER - Previous substantial firefighter experience is required. Completion of New York State EMT course and possession of training certificate is highly desirable, if not, completion of course within one year is required. Must be willing to work shifts at the completion of a thirteen week training period. Safety and Environmental Protection Division.

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

1899. PROJECT ENGINEER - Requires a BS in architecture and extensive experience in a broad range of activities including the preparation of preliminary sketches, working drawings, specifications and estimates for commercial and industrial type buildings. Must be knowledgeable in all types of construction. Plant Engineering Division.

1900. PROJECT ENGINEER - Requires a BS in civil or architectural engineering and substantial broad experience in the erection and modification of buildings and structures. Will be responsible for carrying out and assisting in structural analysis and design, including the preparation of preliminary sketches, working drawings, specifications and cost estimates associated with building construction projects. Plant Engineering Division.

1901. PROJECT ENGINEER - Requires a BS in engineering and indepth knowledge of HVAC systems and controls plus broad and demonstrated experience in conceiving, designing, estimating, and implementing energy conservation projects including modifications to existing mechanical and electrical environmental systems. Responsibilities will include: field investigation, identifying and developing feasible energy conservation opportunities, preparing implementation costs and justifying requests for DOE funding. PE registration is desirable. Plant Engineering Division.

1902. PROJECT ENGINEER - Requires a BS or equivalent in electrical engineering plus substantial experience in layout of lighting, power, alarms, industrial controls and computer analysis of both energy consumption and power distribution systems. Will be responsible for preparing preliminary sketches, working diagrams, specifications and estimates for commercial and industrial building electrical systems. Plant Engineering Division.

1903. TECHNICAL POSITION - Requires AAS degree in electronic technology or equivalent and at least 5 years' experience with high voltage, high power pulse work. Requires thorough knowledge of construction, diagnostic and modification techniques as well as test equipment. Accelerator Department.

1904. SECRETARIAL POSITION - Requires excellent typing and communication skills. Will assist executive secretary with routine functions such as making travel arrangements, preparing purchase requisitions, etc. Word processing experience desirable. Department of Nuclear Energy.

Auto & Auto Supplies

72 VW BUS - asking $1,200. 654-2076.

79 HONDA MOTORCYCLE - CM400T, $1,000. Ext. 7125.

VW PARTS - Augie, Ext. 2419 or 289-4211 eves.

77 CHEVY CAMARO - $3,300. Ext. 7125.

71 PONTIAC LE MANS - $1,200. Jack, Ext. 2907.

72 HONDA MOTORCYCLE FRAME - 750cc. 654-2076.

73 VW TRANSMISSION - automatic, $100; (1) stock Jeep CJ tire on rim, $10; CJ rag top boot, new, $20. Toni, Ext. 2907.

CHEVY C-10 PICKUP PARTS - tailgate, $50; front & rear bumpers, $25/ea.; cross-bed metal tool box, $75. Jim, 289-0876.

76 MUSTANG GHIA - $2,500. 363-6597.

77 CADILLAC COUPE DEVILLE - Gary, Ext. 2350 or 567-9617.

72 PLYMOUTH DUSTER - $650. 727-7626.

73 NOVA FRONT BUMPER - $40; 1969 Chevy Caprice seats, front & back, $45/both. 732-3338.

78 HONDA MOTORCYCLE - 400 Hondamatic, $850. John, Ext. 2172 or 744-4386.

72 DODGE MAXIVAN - $800. Ext. 4976.

70-71 MG MIDGET PARTS - doors, radiator, bumper. Ext. 3499 or 736-2836.

CHRYSLER RIMS - 15", 2/$15; snow tires, E78-14, steel grip, 2/$25. Whitey, Ext. 2913.

68 PONTIAC FIREBIRD - asking $1,200. Ext. 2303 or 289-2425.

71 PONTIAC LEMANS - Michelle, Ext. 3304 or 698-7621 after 6 p.m.

75 CHEVY MONZA - $1,000. 728-2104 eves.

DODGE/PLYMOUTH TIRES - w/wheels, F78x14, $25/ea. Ext. 3042.

57 MGA ROADSTER CONVERTIBLE - $3,500. 878-8193.

71 HONDA MOTORCYCLE - CB350, $200. Check, 286-3604.

14" RIMS - fits Chevy or GM cars, $5. Ext. 3392 or 475-8330.

80 TOYOTA - Oscar, Ext. 3499 or 325-9580 after 6 p.m.

80 CHEVETTE - $2,600. Ext. 4316 or 4379 or 924-3431.

78 PLYMOUTH VOLARE - $2,600. Ext. 4316 or 4379 or 924-3783.

77 FORD GRANADA - R. Mele, Ext. 2514 or 757-3178 eves.

78 DODGE OMNI - $1,275. Armando or Scott, Ext. 7671 or 5285.

79 MERCURY BOBCAT - Brian or Nancy, 924-4680.

14" RIMS - fits Chevy or CM, $5/ea. Ext. 2907.

68 PONTIAC STATION WAGON - $200. Ken, Ext. 5042.

73 FORD GALAXIE - $875 firm. Ext. 4532.

80 PUCH MOPED - $340. Kevin, Ext. 4425.

72 CAPRI - 744-4838 after 6 p.m.

TIRES - (4) Sears 36 Radial, ER78-14; (2) snows; all with rims. Ext. 7238 or 744-2408.

TOYOTA WHEELS - (5) wide rim, $5/ea. Ext. 3042.

DODGE 4x4 - $3,900. 588-4703 after 5 p.m.

73 TOYOTA - Jim, 744-1367 after 6 p.m.

77 OSSA MOTORCYCLE - 350cc, $900. Dan, Ext. 4605.

INSULATED CAP - for 8 ft. truck. Joe Henriques, Ext. 4439.

79 HONDA MOTORCYCLE - 750F Super Sport, $1,900. 473-7809.

76 CHEVY CAMARO - $2,000 or best offer. 286-1378 or 286-8041.

80 VESPA SCOOTER - 928-8869 after 5 p.m.

PONTIAC ENGINE - 428 C.I.D., $200. H. Sauter, Ext. 3783.

CHEVY WHEELS - 6 lug, 15" new, $10/ea.; Chevy truck chrome bumper guards, $20. Paul, 727-4859.

74 CHRYSLER NEWPORT - $600 or best offer. 727-5912.

78 JAWA MOPED - $200; (4) tires, 1200x16.5, 9.75x15.5 wheels, 8 lug, $65/ea. Ext. 4551 or 325-0013.

PONTIAC T-1000 - $4,500 firm. Ext. 2964.

73 PLYMOUTH DUSTER - $700. Est. 4948 or 924-6104.

70 CHEVY MALIBU - asking $1,000. Annamarie, Ext. 2352 or Gil, 473-9016.

75 PLYMOUTH CUSTOM VALIANT SEDAN - $1,200. Rich, Ext. 4134.

70 DODGE VAN - $300; 72 Buick, $350; 73 Chevy Impala, $300. Lou, Ext. 4639 or 277-2671 after 6 p.m.

75 CHEVY MONZA - best offer. Lin, Ext. 3047 or 924-7637.

69 VW SQUAREBACK - $450. 928-5684.

TRAILER HITCH - Class III. Carmen, Ext. 2663 or 298-4931 after 6 p.m.

75 FORD TORINO - Zvi, Ext. 3187 or 4407 or 3936.

69 VW - $250 as is. Ext. 4249.

75 FORD LTD - $900; 1976 Pinto Station Wagon, $1,500. Ursula, 331-4596.

68 CHEVELLE MALIBU - Bill, Ext. 4774 or 298-8657.

74 AMC HORNET - asking $700. 924-0318.

81 CHEVY MALIBU CLASSIC - $6,200. Ext. 5294.

TREK-SLIDE ON CAMPER - 11-½ ft. 878-0516 after 6 p.m.

83 RENAULT ALLIANCE DL - 878-4498.

73 CHEVY VEGA - Ext. 3596 or 821-1039.

CANVAS TOP - for CJ7 Renegade Jeep, $200 or best offer. 286-1378 or 286-8041.

Boats & Marine Supplies

SPORTCRAFT FISHERMAN - 85 HP, Mercury outboard, galvanized trailer. Walter, Ext. 3457 or 732-1913.

20= OWENS WOOD BOAT - with cabin, good cond., $200. Ext. 2733 or 878-8491.

23' ALLMAND - 1973, inboard, 225 HP FWC, Cuddy, VHF depth, excel. cond., $9,500. Carl, 286-0271.

12-½" SAILBOAT - AMF Puffer, main sail & jib, excel. cond., galv. Highlander trailer w/extras. 757-4349 eves & weekends.

16' FIBERGLASS BOAT - 65 HP, walk thru bow, canvas, gas tanks, trailer, excel. cond., $1,500. Ext. 4058 or 286-0436.

35' PEMBROKE SEDAN - F/B, twin Chryslers, luxury live aboard, super cond., air condition, h/c water shower, $12,000. 475-8710.

Miscellaneous

REFRIGERATORS - (1) Frigidaire, $75; (1) Hot Point, $80; both upright, white, very good cond. 289-3848.

ANTIQUE SPINDLE-BACK ROCKER - oak, w/carvings, $75; antique trunk w/brass fittings, $45; both in great shape. 475-2090 eves.

TERRACE TENT - Morsan, 10'x10' w/10'x7' fly, 3 air mattresses, sleeping bags, $85; Kenmore portable zig zag sewing machine + attachments excel., $45. Howard Jewett, 878-0514.

DISHWASHER - Caloric, portable, butcher block top, 2 yrs. old, excel. cond., $200. 654-0575.

PLAYPENS - Porta-Yard, for children, (1) almost new, $8, (1) used, $4. 929-3455.

ORGAN - Yamaha, new cond., 4 yrs. old, double manual keyboards, rhythm section, much more, cost new $2,200, sell for $1,100. Richie, Ext. 2175 or 734-7342.

TIME CONTROLLER - new, model T185, 24 hr. dial, adjustable 10/60 minute trippers, 120V, AC, $40; hand ratchet threader, ridgid 4 way pipe for 1"-2" pipe, $50; used tork time controls, model 7202, 24 hr. dial, omitting device, 120V, AC, $20. Angelo, Ext. 3457.

RECLINERS - identical pair, wall-away units, excel. cond., 2 yrs. old, Herculon material, paid $500, cost you only $195 for both. 654-5888.

HOME COMPUTER - Commodore PET, 32K, rarely used many extras, price neg. 289-1726 after 6 p.m.

POOL FILTER - Hayward Perflex, #EC-60, for inground/above ground pool, excel. cond., $100. George, Ext. 4227 or 751-0894 eves.

RAILINGS - (2) for 3 step stoop w/4' landing, fancy, heavy duty wrought iron. 744-3792.

WINDOWS - 6'x12', new, 3 sections, 2 small end windows, middle section, large; metal bed frame. Gary, Ext. 2350 or 567-9617.

ANTIQUE OFFICE CHAIR - perfect cond., all leather seat, $20; 26" Columbia bicycle, $50; yogurt maker, $7. 732-3338.

DINING ROOM SET - oak, Parkay table, 6 high-back wrought iron chairs, 2 with arms, $300. 281-0350.

ANTIQUE TYPEWRITER - Remington portable, excel., best offer; kerosene heater, 22,600 BTU, Sun Glow, best offer over $125; roof racks for car w/gutters, $25. Harriet, Ext. 4853 or 473-4948.

SPRINKLER - Nelson, metal, oscillator, covers 60'x40', $8; trailer hitch, class III, 10K lbs., receiver & head, $75; hose reel wall mount, holds 100 ft. of hose, $8. 732-5004.

HAMS - Heath C.W. transceiver HW16, with V.F.O., ant. tuner, SWR meter, coax. switch, complete, $200. 589-2648.

PANASONIC CASSETTE RECORDER - model RQ-409S, built-in mike & handle, excel. cond., $30; softball catcher's mask, $8; alum. bat, $15. 3876 or 4822.

PACHYSANDRA - ground cover for steep slopes & shaded areas, 25/$3; 50/$5.50; 100/$9; Mountain Laurel, 3-6 yr. plants, $6-10. Janice, 929-4522.

PROM & BRIDESMAID GOWNS - sizes 7-9, blue & yellow, worn once, reasonable. Ext. 2160 or 273-5574.

ELECTRIC TYPEWRITER - IBM, good cond., $70. Gabusi, Ext. 7704 or pp. 203 or 298-4435.

POLAROID ONE STEP CAMERA - brand new, $10; Estey organ, $20; Norelco curling iron, $5. John, 924-6809 after 6 p.m.

MINI BIKE - Tecumseh engine, good cond. Chris, 585-4038.

STORM DOOR - brown, colonial, w/screen, 32"x80", $25; coppertone range hood w/light & fan, 36", $20. 744-0722.

COUCH & CLUB CHAIR - excel. cond., $125. 862-7986 after 7 p.m.

ANTIQUE ROCKING CHAIR - $60; old style school desk. Serban, Ext. 3721 or 473-4375 after 7 p.m.

WATER PUMP - self-contained w/tank, Sears Best; Kenmore 14" floor waxer/scrubber, 2 spd. w/attach.; Hoover upright vacuum cleaner. Ext. 3392 or 475-8330.

KODAK TELE-EKTRA LITE CAMERA - 600, electronic flash, turns itself on & off when needed, new. Bob Johson, Ext. 3354.

DRUM SET - 4 piece w/pastie cymbal; 2-man rubber boat w/oars. Terry, 325-1080.

MARE - Bay, white mane, 14 yrs. old, 15-½ hands, tack included, $800. Ext. 2766.

DRYER - & refrigerator, run well, $50/ea. Roy, Ext. 4664 or 744-8779.

CANARIES - all types & colors, Glouster, Red Factor, American Sinders, Borders. Whitey, Ext. 2913 or Ramona, 928-3088.

MATTRESS - twin, Beautyrest, like new with Sealy box spring, good cond., $50. Barbara, Ext. 3437.

AIR CONDITIONERS - window or wall installation, $75/ea. Ext. 4058 or 286-0436.

BOY'S BIKE - 26", Ballon tire, Sears, good running cond., $10. 286-8814 after 5 p.m.

16MM MOVIE PROJECTOR - Bell & Howell, circa 1940; 3'x4' beaded screen. 821-0865.

FREEZER - 20 cu. ft. upright, manual defrost, excel. cond., $175. Paul, Ext. 4156.

SPECTRA AMP. - #225, (2) 12" speakers w/foot-pedal, excel. cond. & electric guitar, $475. Den, 289-0753.

CEILING TILES - used, white, insulating, 512 sq. ft. x ⅝ in. thick, $25. 473-7809.

POOL TABLE - 9= slate top, $750; (2) white ratan chairs, need cushions, $30. Ext. 2733. 878-8491.

Yard Sale

WADING RIVER - Moving, all must go, Saturday, June 25, Merroke Trail, 10 a.m.-4 p.m., raindate Sunday.

CENTER MORICHES - assorted items, 4 Hewitt Blvd. and Cynthia Lane, 10 a.m.-4 p.m., June 25.

E. MORICHES - 37 N. Paquatuck Ave., June 25-26, 9-4. 878-0074.

Free

RECLINING CHAIR - white, vinyl. Ext. 3486.

NEEDLEWORK CLASS - today, noon, Bldg. 134, learn needlepoint, picture frame, ladies lounge. Karen, Ext. 3300. 795-5551.

CALICO KITTEN - 11 weeks old, trained. Ext. 2926 eves or 744-3298 days.

Real Estate

Real Estate advertised for sale or rent is available without regard for the race, color, creed or national origin of the applicant.

For Rent

BERKSHIRES - chalet, 3 hrs. from NYC, 3 bdrm., 2 baths, fully equipped kitchen, electric heat, deck w/spectacular view, near lake, hiking trails, near ski areas, cross country skiing on property, available weekends & weekly. 929-6946 after 6 p.m.

EASTHAM, CAPE COD - June-Sept., 4 bdrm. house, sleeps 8, 2 baths, washer/dryer, dishwasher, deck near beaches. 722-3865 eves.

MASTIC - 2 bdrm. apt., private entrance, off Mastic Road, security, references, $400 plus utilities, avail. July 1. 281-5605, 6 to 8 p.m.

PORT JEFFERSON - Belle Terre, furnished, 3 bdrm., eik, lr, dm, den, central a/c, washer/dryer, beautiful grounds, avail. Aug. 1 or Sept. 1 for 9-12 mos. or longer, $875 per month plus util. 928-4899.

BELLPORT VILLAGE - furnished house, near bay, stores, late August to Christmas or January, rent negotiable to right tenant. 286-0379.

MASTIC BEACH - 3 bdrm. house, furnished, full basement w/additional partly finished room, near bay, $465/mo. George, Ext. 3793 or 399-3609.

SHIRLEY - furnished 2 bdrm. house for summer, 5 min. to Fire Island. 281-0797, 10 to 12 or after 5.

For Sale

MARGARETVILLE, NY - year round, 2+ bdrms., 2 baths, electric & wood heated, full cellar, fireplace, 2 car garage w/shop & loft, all heated & insulated, storage bldg., 8 acres, 2 cleared, ½ stream, adjoins state land. 914-586-4634.

BROOKHAVEN HAMLET - custom 4 bdrm. on 1.25 acres, privacy, excel. cond., walk to grade & high schools, 1 mile to bay, 9 miles to Lab, asking $125,000. Ext. 4058 or 286-0436.

MEDFORD PINES - 4 bdrm., 2 baths, dr, lr, eik, den w/fp, inground pool, enclosed patio, 1/3 acre, assume 7%, $59,900. Jack, Ext. 4274 or 289-6708.

WEST SAYVILLE - 3-½ bdrm., split level, 1-½ baths, 1 car garage, ¼ acre, Sayville school district, asking $69,900. 589-3485 eves.

RIDGE - Leisure Village condo, 2 bdrm., all appliances, central air, complete maintenance, 24 hr. security. 821-0865.

CHENANGO COUNTY, NY - 46 acres, town of Plymouth, $23,000. 732-6485 after 6 p.m.

EAST MORICHES - Newport Beach, near Hamptons, 13 mi. from Lab, 3 bdrms., 2-½ baths, 2 car garage, laundry room, playroom with fireplace, fenced backyard, 2-zone heating, ½ acre, private beach & marina rights, $68,000. Ext. 2733 or 878-8491.

Car Pools

HUNTINGTON/MELVILLE - 4th person needed. Meyer, Ext. 3036.

COMMACK - 4th rider/driver, door to door, on time, 8:30-5. Jim, Ext. 4452.

E. ISLIP - 3 man pool desires other rider/drivers. Ext. 4532.

EAST PATCHOGUE - near Brookhaven Hospital, 8:30-5. Dom, Ext. 3954.

COMMACK - looking to join carpool, 8:00-4:30. Don, Ext. 2043.

Wanted

CLAMPS - for woodworking; Lawnboy mower, any condition. Dick, Ext. 3499 or 589-9103.

CAMPING KITCHEN BOX - 924-6809 after 6 p.m.

TO RENT - 3 rm. apt. for couple with dog, shift worker. 286-8140.

OFF-ROAD THREE WHEELER - 110 to 185cc, will consider bent and/or broken. Bob, Ext. 5286 or 298-9594.

SURF CASTING POLE - & reel. Don, Ext. 2907.

ASSEMBLY LANGUAGE PROGRAM - for VIC or 64, interested in marketing their software. 924-6512.

HOUSE TO RENT - Bayport/Blue Point area only, 2 to 3 bdrms. Carol, Ext. 3341 or 567-6433 after 6 p.m.

HOUSEMATE - share large 4 bdrm. house, 3 bath, 20 min. to Lab, sundeck, washer/ dryer, $164/mo. + 1/3 util. Ext. 2521 or 928-8379.

MEN'S BIKE - 3 spd. Joan, Ext. 3295 or 363-7222.

20" BMX BOY'S BIKE - for competition only; small window air conditioner, 6-8,000 BTU. J. Medina, Ext. 7636 or 924-6971.

CREW POSITION DESIRED - cruise or race, experienced. Joe, Ext. 7961 or 878-2655 eves.

MEN'S WATCH - Bulova, Acutron, any cond. George, Ext. 3536.

TRAILER - for 17' boat, good cond. Damian, Ext. 3765 or 744-5079.

FILTER - for above ground pool, reasonable. Carl, Ext. 3739 or 928-6944.

HELP - running a computer program called HEATING5. If you can help call Bill, Ext. 2378.

PERSONS - wishing to attend photovoltaic hands-on workshop, 7/16 or 7/17 at Nassau Community College. Al Campbell, Ext. 2047.

TO RENT - studio apt. or house, beginning July for approx. 1 yr., prefer furnished, reasonable. Debbie, Ext. 3420 or 643-2261 eves.

WOOD LATHE - from old houses. 751-6418.

BUTTERFLY WING CHAIRS - wrought iron, covers not necessary. Ext. 2926 eves or 744-3298 days.

CARPOOLERS - who have been together 15 year or more - for Bulletin story. Anita, Ext. 2346.

Ads for Services may be posted at the BERA Sales office.

Ads left out of this issue due to lack of space need not be re-submitted to appear in next week's issue. Please note that ads may not be more than 15 words long and must be received in the Bulletin office by 4:30 p.m. Friday, for inclusion in the following week's Bulletin.

Classified Ad Policy Deadline is 4:30 p.m. Friday for publication Friday of the next week.