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BROOKHAVEN NATIONAL LABORATORY

High-Level Commitments From DOE's Tara O'Toole and Terry Lash Regarding High Flux Beam Reactor and Tritium Plume

• BNL will not restart the High Flux Beam Reactor (HFBR) until the cause of the tritium plume flowing south of the reactor has been identified and corrected.

• The Laboratory will remove the spent fuel from the storage pool in the bottom of the reactor, then drain the pool and install a stainless steel liner.

• Brookhaven will keep the plume from going off site, including pumping out the groundwater.

Tara O'Toole, U.S. Department of Energy (DOE) Assistant Secretary for Environment, Safety & Health, made these firm commitments to Senator Alfonse D'Amato and Congressman Michael Forbes at BNL last Wednesday, February 19. The next day, O'Toole reiterated these three commitments to the media at a morning news conference, and, then, in the afternoon, to the legislators and members of the public assembled at a Suffolk County Legislative Public Hearing in Riverhead.

At that hearing, O'Toole said that DOE "will find both the people resources and financial resources to carry out these processes, and we will not rob the research effort at BNL to make this happen."

At the press conference, O'Toole emphasized that she and Terry Lash, Director of DOE's Office of Nuclear Energy, Science & Technology, had come to BNL to show "the matter of tritium in groundwater at BNL is getting very high attention at DOE. We understand the concerns of citizens on Long Island on protection of this precious resource. . . ."

At the same time, said Lash in response to a question about shutting down the reactor permanently, "We are giving absolutely no consideration to not operating this reactor. We are committed to taking steps necessary to be sure it will be able to restart in a safe manner. We believe this reactor is an important resource."

Lash added that he expects the current reactor shutdown — which could last at least a year — to have no immediate impact on HFBR personnel because they will be busy working on efforts to resolve the problem.

Those who will be seriously affected, Lash said, are the 250 or so researchers who rely on the HFBR to pursue their materials science studies. "This is one of the best [research] reactors in the country — the best for certain kinds of work," he said.

At a news conference held at BNL last Thursday, February 20, Tara O'Toole (right), the U.S. Department of Energy's Assistant Secretary for Environment, Safety & Health, answers reporters' questions.

Terry Lash, Director of the U.S. Department of Energy's Office of Nuclear Energy, Science & Technology, addresses the media at last week's news conference. **— Photos by Roger Stoutenburgh**

Speaking at the Legislative hearing, D'Amato acknowledged the importance of the science done at the HFBR and at BNL, but said that this does not justify the tritium contamination. Still, he said, "I believe that we have received a commitment, a good faith commitment, from the DOE."

D'Amato added that he had spoken to Acting Secretary of Energy Charles Curtis, who had responded "forthwith . . . as it related to an action plan."

D'Amato also said he had spoken to O'Toole and "she is totally committed to seeing to it that the DOE undertakes the kind of action that is long overdue. . . ."

Forbes also spoke at the hearing about this being a situation "that causes all of us on Long Island great consternation. We live on a sole-source aquifer. We are like few other regions of the county." He recognized that BNL has "a very large presence here on Long Island," but there is "a very profound problem. . . ."

In sum, said Forbes, "We need to restore the confidence of the residents of Long Island in their drinking water. . . . Only by the expeditious cleanup of the site and removal of the problem will we restore confidence."

Addressing those assembled in Riverhead, O'Toole acknowledged, in the post-Cold War environment, "We should be forthcoming."

She said that the kind of attention now being brought to this problem "is not going to go away." She and Lash "will stay personally engaged in this matter," coming back to BNL at least on a monthly basis.

"We understand that we have lost your trust, and DOE is experienced at earning your distrust," said O'Toole. "We are engaged in a change of culture . . . prepared to demonstrate by performance that we mean business. . . .

"Safety has to be integrated with the way we plan and work and the way we carry it out. . . .," added O'Toole. "Integrating safety into the way we do work has been one of the foci of my tenure as assistant secretary: Safety is everybody's business."

DOE to Provide Public Water to 500 Homes in Manorville

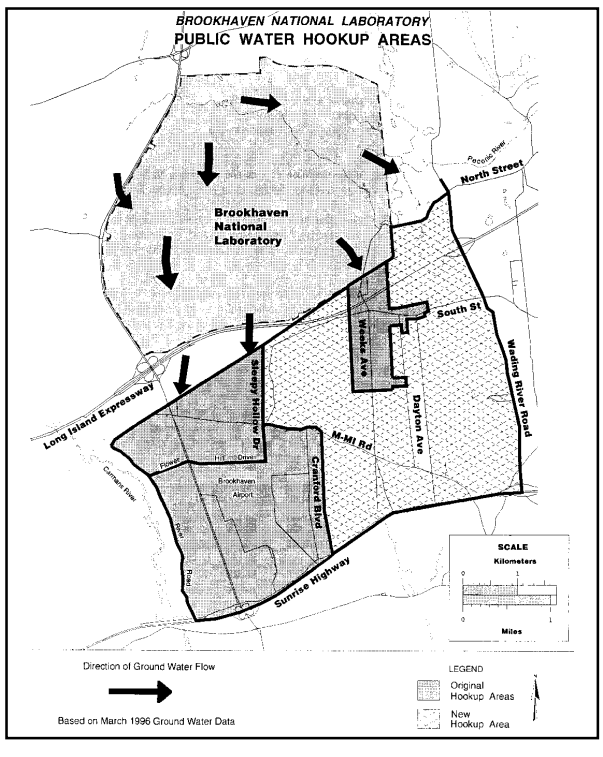
At a press conference held Monday morning at a Manorville resident's home, Senator Alfonse D'Amato and Congressman Michael Forbes announced that the U.S. Department of Energy (DOE) has agreed to connect 500 Manorville homes to public water.

Forbes and D'Amato requested the water hookups to guarantee residents living near BNL that their drinking water is safe. DOE has committed $6.2 million to connect these homes to the Suffolk County Water Authority.

Tests conducted by the Environmental Protection Agency and BNL consistently show the local groundwater supply is safe. DOE and Lab officials agreed to connect these homes to the public water supply to demonstrate BNL's commitment to being a responsible member of the local community.

These 500 homes surround a smaller area of 100 homes that DOE agreed last September to connect to public water after concentrations of the agricultural pesticide ethylene dibromide, or EDB, were found in a nearby monitoring well.

"I am pleased that the Department of Energy is acting like a good neighbor by connecting these 500 homes, thus easing the worries of Manorville residents who are concerned with the purity of their drinking water," Forbes said. "With the troubling history of groundwater contamination at Brookhaven National Lab, it will take some time before local residents are fully confident that the Lab's environmental practices are not compromising their health and safety. With today's commitment by the Department of Energy, they have taken an important step in that direction.



"The people who live in the area surrounding Brookhaven Lab are entitled to peace of mind," said D'Amato. "They should not have to worry that the health and safety of their children and family is being jeopardized. Even though the water is safe today, it is understandable that there is legitimate concern about the quality of the water. Dr. O'Toole [DOE Assistant Secretary for Environment, Safety & Health] and the Department of Energy should be commended for moving aggressively to demonstrate, by word and deed, a good neighbor policy."

In early 1996, DOE announced plans to hook up 800 homes in the North Shirley area to the municipal water supply, as a precautionary measure because a plume of chemically contaminated groundwater was migrating from BNL. In September 1996, DOE offered to connect the 100 homes that were potentially threatened by EDB.

The first group of 800 homes was hooked up by the end of 1996, and hookups for the second group of 100 homes are under way. Work on the new hookups will begin as early as next month, and they should be completed by the end of the year.

In this issue . . .

A Look at the Tritium Plume: Past, Present and Future

Tritium is a radioactive isotope of hydrogen and a by-product of some operations at the High Flux Beam Reactor (HFBR). Last year, as part of an agreement with Suffolk County, BNL installed monitoring wells south of the reactor to check for any conceivable contaminants such as tritium in the groundwater.

The first samples from these wells were taken on October 17, 1996, and BNL received the results on December 5. One well showed tritium at a level of 2,520 picocuries per liter (pCi/L), about one-tenth of the Environmental Protection Agency's (EPA) drinking water standard of 20,000 pCi/L, while a second well showed tritium at 454 pCi/L.

The wells were resampled, and the results that came back on January 8 showed tritium levels in the previously higher well at 44,700 pCi/L, or about two times the drinking water standard, while the second well was registering 2,110 pCi/L.

Verification samples were collected on January 9, and data were available on Friday, January 10. DOE was notified on Monday, January 13.

BNL notified public officials on Thursday, January 16, sent a memo to all employees on that Friday and issued a press release that Saturday.

By January 16, temporary monitoring wells were being sunk south of the reactor to try to determine the extent of the contamination. On February 1, a well 50 feet south of the HFBR was found to have tritium levels at 32 times the drinking water standard.

Last week, tritium at five times the standard was found in a sample from one of the additional temporary Geoprobe wells along Brookhaven Avenue, about 1,100 feet south of the reactor. Because groundwater moves at the rate of about one foot per day, finding the tritium that far south indicates that the plume has gone on longer than the initially expected two years.

Since the Geoprobe wells have a limited sampling range, additional wells, known as vertical profile wells, because they can provide a profile of water at various levels, are now being sunk along Rowland Avenue, about 1,900 feet from the reactor, and along the Lab's southern boundary, about 1.5 miles from the HFBR.

While well digging and sampling continue in order to define the extent of the contamination, efforts are also under way to identify the source of the tritium.

One area that has been ruled out is the reactor vessel, where the tritium originates, because it is surrounded by very extensive and sophisticated leak-monitoring equipment that reveals no sign of leakage.

Roger Stoutenburgh

The U.S. Department of Energy's Tara O'Toole, Assistant Secretary for Environment, Safety & Health, and Terry Lash, Director of the Office of Nuclear Energy, Science & Technology, respond to questions at the news conference held at BNL on Thursday, February 20.

At this point, the most likely source of the tritium contamination is water leakage from the HFBR's spent fuel pool, where the enriched uranium fuel rods used to generate neutrons in the reactor are temporarily stored when they are depleted. Tritium from the reactor's primary coolant gets into the pool as water droplets on fuel rods and other components that are stored in the pool.

The 68,000-gallon pool is made of poured concrete. One suspected weak area is a joint in the concrete where the reactor floor and the pool meet, through which tritiated water could conceivably have been leaking.

Another possible source of some contamination — but not enough to account for all of it — is a 1995 spill of an estimated 150 gallons of coolant water that fell onto the concrete reactor floor during testing of a pump. While it was believed at the time that all of the water was cleaned up, it is possible that some of the water may have leaked through the concrete.

Given all of this, Tara O'Toole, DOE's Assistant Secretary for Environment, Safety & Health, observed last week at BNL that, with the benefit of hindsight, the Laboratory and DOE should have done a number of things differently:

• **Monitoring wells should have been installed south of the reactor beginning at least in 1992**.

In that year, a notice from the Nuclear Regulatory Commission advised that leakage from pools such as the HFBR's had been found at other facilities. While BNL discussed checking for leakage at that time, it was not given a high priority because there was no indication of leakage and because, given funding limits, other areas of the Lab required more immediate attention for cleanup.

In 1994, Suffolk County inspected the fuel storage facilities and began urging BNL to modify the pool. To resolve the issue, in March 1995, Suffolk, BNL and DOE's Brookhaven Group agreed that monitoring wells would be installed south of the HFBR by August, but, that June, this project was held up due to budget reductions. The project got under way in March 1996.

• **The 1995 spill should have been reported to regulators other than DOE**.

Although BNL followed all proper procedures for cleanup and reporting of the spill to DOE, and it was not deemed a serious occurrence that needed to be reported further, the fact that the spill was not reported outside of BNL and DOE has now raised serious concerns among regulators, elected officials and the public about whether they can be sure they are getting the full story. Even though the spill is not a strong suspect for causing the current contamination plume, it is a strong contributor to feelings of distrust associated with the plume.

• **The initial finding of tritium at levels above the drinking water standard should have been reported faster**.

Although BNL and DOE believed they were acting prudently by double-checking the results before releasing them, the public perception is that BNL and DOE were withholding important information.

"While these are undeniable shortcomings, they can have much to teach us," said BNL Director Nicholas Samios. "We are committed to finding the source of the contamination, stopping it and remediating it before the HFBR resumes operations. And we will keep our elected officials, our regulators and our neighbors informed every step of the way."

While a precise schedule may take some time to finalize, O'Toole and Terry Lash, Director of DOE's Office of Nuclear Energy, Science & Technology, promised the following last week:

• **Within 30 days, DOE will provide a schedule for the shipment of the spent fuel rods that now occupy the reactor pool**.

The fuel rods must be removed before the pool can be drained, but shipping is complicated by the fact that the HFBR is a uniquely designed research reactor with custom fuel rods not used anywhere else. Thus, only five super-strong casks now exist for transporting this fuel. Only a limited number of fuel rods can be shipped in each cask, so several shipments will be required. Each must be planned carefully to comply with the stringent regulations surrounding fuel shipments.

• **Within 60 days, the Lab will begin remediation of the contaminated plume**.

Most likely, the tritium will be removed by pumping out the groundwater. Remediation, however, cannot begin until the extent of the plume is determined. Sampling results from the new Rowland Street wells should be available by early next week and will, it is hoped, give a clearer idea of whether the Lab is closing in on the plume's leading edge.

• **Within 90 days, DOE will present a schedule for the installation of a stainless-steel liner in the pool**.

This liner, which will bring the pool up to contemporary standards for such facilities, can only be installed after all of the fuel rods have been removed, and the water has been drained from the pool and stored safely.

In the meantime, the Lab is investigating the possibility of removing enough of the pool water to drop the level below the suspect joint in the concrete. But the stainless-steel liner must still be installed.

— Anita Cohen

BNL's Operations On Agenda Tonight In East Islip

Tonight, Friday, February 28, at 7:30, in the parish hall of St. Mary's Roman Catholic Church in East Islip, a discussion will be held on BNL's operations and "Your Health, Your Children's Health: the Effects of Radiation and Chemical Contamination."

Speakers will include Bill Smith of Fish Unlimited, Pete Maniscalco of Manorville, and BNL's Mike O'Brien of the Safety & Environmental Protection Division.

Sponsored by the parish's environmental prayer community and its peace and justice group, the discussion will take place at 20 Harrison Avenue in East Islip. All are invited to attend.

Public Requests Fair Hearing for BNL

Seven BNL employees were among those who spoke in support of the Laboratory at a public meeting of the Suffolk County BNL Task Force, held on Thursday evening, February 20, in Riverhead.

But employees were not alone in their request for a fair hearing for the Lab. A resident of Wading River said to the Task Force, "I am not scared of BNL, but of you. I have just a lot of fear." She said, "No one asks about radiation from hospital waste, or from plane crashes . . . but [by shutting BNL], you will hurt Long Island for nothing."

Task Force Chair Roger Grimson responded, " [W]e should be on the same side. We didn't come in to close BNL. We were brought in to investigate if there is damage being done."

Two committee members also strove to reassure the standing-room-only crowd. Jane Alcorn said, "We have an open mind," while Diane Nannery said, "I have no set bias, I want to know the truth. . . . I have problems with presenting ourselves in any way that will change the minds of those listening."

After Grimson opened the meeting, Task Force Vice Chair Ron Stanchfield introduced himself, saying that he had been a whistleblower at the Shoreham Nuclear Power Plant and urging any BNL employee who had information that they might be uncomfortable reporting to the Lab, to contact him, even anonymously.

Joseph Carson, an engineer with the U.S. Department of Energy (DOE), who believes himself to be the only three-time whistleblower in federal government history, was one of the speakers from the floor.

Carson encouraged others to become whistleblowers, if necessary, citing the culture of fear to speak out that he believes exists at BNL and other DOE facilities.

Several BNL employees refuted this claim. The Lab was also supported by non-employees. One was Reverend Edwin Townsend, retired pastor of the Middle Island Presbyterian Church, who, as a volunteer, coordinated the pastoral care program for patients at the Lab's research hospital for 25 years. Addressing the committee, he described the Lab as a "fine institution" and said it "stands high on my list. . . ."

Earlier in his remarks Townsend had said, "I don't like to speak out, but it disturbs me that so many speak out of so much ignorance . . . I hope that you would not be swayed by half truths, but, when you don't have knowledge, would get information from those who do. . . . Decisions should not be made from emotion. They should be rational and factual."

Another speaker said, "There are problems with BNL, as with every institution in the world," but, she said, studies on brown tide and breast cancer have shown that they are not due to BNL. "We need to support research. . . . We should monitor in a realistic way, not through emotion. . . It is shortsighted and reactive to say we should close this institution down."

Is the Drinking Water Safe?

Tritium, a radioactive isotope of hydrogen, has been found in groundwater south of the High Flux Beam Reactor (HFBR) at levels up to 32 times the Environmental Protection Agency's (EPA) drinking water standard. That poses some questions for BNLers:

What does the drinking water standard mean?

In establishing its drinking water standard, the EPA set a radiation dose limit of 4 millirem per year (mrem/yr) that a member of the public could receive through drinking water. A person would reach that dose by drinking water containing tritium at a level of 20,000 picocuries per liter (pCi/L) each day for a year, assuming that this is the individual's only source of drinking water. Thus, 20,000 pCi/L is recognized as the EPA's drinking water standard for tritium.

When that number was set by EPA and the Safe Drinking Water Act, about 20 years ago, the calculations were done with some assumptions about energy and biological uptake of material that have since been revised. Today, calculations by health physicists show that it is more accurate to say that, to receive a dose of 4 mrem/yr, a person's sole drinking water source would have to contain tritium in concentrations of 80,000 pCi/L. However, until the Safe Drinking Water Act is revised, the standard remains at 20,000 pCi/L.

Whether interpreted as resulting from 20,000 or 80,000 pCi/L, the EPA's drinking water standard for tritium is 4 mrem/yr. For comparison, both DOE and the Nuclear Regulatory Commission have a general public radiation limit of 100 millirem per year, and the average person in the U.S. receives about 300 millirem per year from natural sources, such as radon, and from common man-made radiation source, such as medical x-rays.

Is there any tritium in the drinking water?

According to a 1996 New York State Department of Health Services report, normal surface water and shallow groundwater in New York State contain about 100 to 300 pCi/L of tritium. This "background" tritium is generated by cosmic radiation in the upper atmosphere and fallout from atmospheric nuclear tests conducted in the 1950s and '60s.

Beyond the background tritium, is the tritium plume south of the HFBR contaminating the Lab's drinking water?

No. The potable supply wells that provide BNL's drinking water are located north of the tritium contamination, in the opposite direction of groundwater flow. On-site drinking water is tested daily for radioactivity, and results continue to show that the Lab's tap water is not contaminated with tritium.

Is the tritium plume contaminating drinking water off site?

No. The EPA has reviewed the data that BNL has collected to date and concurs that there is no public health threat from the contamination, which has not reached any drinking water supply, on or off site. Since the plume is distant from the Lab's southern border and since DOE is committed to cleaning up this contamination as soon as possible, tritium in excess of the drinking water standard won't leave the Lab site.

Is there any danger that radiation from the tritium plume in the groundwater will be emitted through the ground above it?

No, the water is too far underground — at least 50 feet. The low-energy beta particles from the tritium will not penetrate even an inch through air.

So when is tritium a health hazard?

Tritium is a health concern if ingested or absorbed in the body in large quantities. To put the numbers in perspective, if a person were to drink two liters of the most contaminated groundwater at BNL each day for a year, that person would receive radiation equivalent to three chest x-rays.

If the Lab's drinking water is safe, why do some buildings, or some areas on site have bottled water?

For the same reason that many people choose to drink bottled water in their homes: In many older buildings, at home or at work, three elements from the building's plumbing supply system can enter the water supply if the water sits for too long in the piping. Lead from the solder in the pipes can be a health problem, and iron and copper from the piping can cause health problems for some people and affect the water's taste, odor and color.

To reduce trace amounts of these elements, whether at work or at home, you should flush the tap before using the water. Let it run until it's noticeably colder, typically 30 seconds to a minute, especially if the water has been unused for long periods.

So, even though the Laboratory's water is safe to drink, the plumbing in some BNL buildings can affect the water's composition, and bottled water has been provided.

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BNLers Urged to Report Concerns On Environment, Safety & Health

When it comes to environment, safety and health (ES&H), all BNLers, contract workers and guests have an obligation to comply with the Lab's regulations. They are also required to report any unsafe conditions within the workplace that may threaten their physical well-being or violate ES&H or other relevant standards.

These responsibilities are described briefly, then in detail, in the **Employee Guide**, which is given upon arrival to all employees who receive benefits. The information is also contained in a four-page fact sheet entitled **BNL Summary . . . A Brief Overview of BNL Policies**, which is distributed to all other workers and guests when they arrive.

Said Sue Davis, BNL's Associate Director for Reactor, Safety & Security, "All of us at the Lab must work together on pooling ideas on improving anything that involves environment, safety and health. It's Lab policy that no form of retaliation will be initiated or tolerated against anyone who registers suggestions or complaints. But management recognizes that reporting on such issues may present difficulties in certain cases, which is why we have provided a choice of ways in which to communicate concerns. We urge you to use these avenues since we welcome your active participation."

The several avenues for reporting ES&H concerns are listed periodically in the Brookhaven Bulletin and are summarized as follows:

• First choice: **Alert your line management**. Should this prove unsatisfactory, then —

• **Report to the department or division's ES&H coordinator,** or —

• **Report to the department or division's ES&H representative from the Safety & Environmental Protection (SEP) Division.**

• If you are covered by a labor agreement, then you may address ES&H concerns through the **labor-grievance process**.

• Employees who are reluctant to use the supervisory chain to report concerns have other avenues available. One is the **Employee Relations Counselor**, Susan Foster, Bldg. 185, Ext. 2888, who may be asked to oversee an investigation of the situation and its correction. If requested, Foster will make every effort to handle these matters confidentially.

Susan Foster

To identify the problem, the employee fills out the **Employee Concerns Reporting Form**. This form was specifically designed to encourage employees to alert BNL management of any condition or conditions adverse to employee safety and health or to the environment.

Foster then contacts SEP Division Head Robert Casey, who assigns an SEP staffer to investigate the situation. This entails classifying the level of concern and how quickly it needs to be addressed, and, also, how it had been addressed within the organization. After classification, a Directorate-level committee investigates the problem.

Once it has been resolved, Foster contacts the person filing the complaint. Since April 1993, when the program started, three such instances have occurred and been resolved with this procedure.

Foster's office also helps employees wishing to report cases of waste, fraud or abuse.

• Another option in reporting concerns is through the **Office of Environmental Restoration**. If you have questions about the Lab's Superfund activities, or you have information that could be useful to this office, call **Community Relations Coordinators** John Carter, Ext. 5195, or Mary Dernbach, Ext. 6336.

• If the outcome is still unsatisfactory, the concerned individual has yet another avenue — calling the **U.S. Department of Energy's (DOE) Brookhaven Area Office**, Bldg. 464, Ext. 2405.

Notices on "Occupational Safety & Health Protection for DOE Contractor Employees at Government-Owned, Contractor-Operated Facilities" are posted by DOE in all buildings, giving instructions as to how to file complaints.

Additional notices call on employees to report "Fraud, Mismanagement, and Waste involving the U.S. DOE, its Employees, Programs, Contractors or Subcontractors," giving the **Office of Inspector General Hotline** numbers of 1 (800) 541-1625, or (202) 586-4073. — Liz Seubert

Lab employees who have work-related problems, questions or complaints have several avenues open to them. All of the following sources treat their contact with employees in a strictly confidential manner, and employees are encouraged to seek out whatever source may be best to address their particular concern.

• **Diversity Office** — Headed by Lorraine Merdon, this office offers assistance with issues related to the Lab's equal opportunity, affirmative action, diversity and sexual harassment programs. For help with these or other workplace issues, call Merdon, Ext. 3318; Frances Ligon, Ext. 3709; or Jeffrey Taylor, Ext. 2703; or contact:

(continued in supplement on page 5)

Got a Problem? They Can Help!

Roger Stoutenburgh

Chaired by Terrence Buck (front, third from left), Division of Contracts & Procurement, the Affirmative Action Advisory Committee advises the Laboratory Director on the progress of affirmative action and equal employment opportunities at the Lab. Members include: (back, from left) Myron Strongin, Physics Department; Susan Eng Wong, Computing & Communications Division; April Donegain, Financial Services Division; Richard Melucci, Budget Office; (front, from left) Elizabeth McBreen, Physics Department; Sandi Sullivan, Department of Advanced Technology; Terrence Buck; and Robert Brown, Medical Department. Not present is Carmen Falkenbach, Director's Office.

Suffolk Life Prints Employees' Views About BNL and Its Research

The following article by Medical Department Scientist ***Jeffrey Coderre*** *appeared in several editions of* Suffolk Life *newspapers on January 22, 1997.*

Point of View

Saving Lives at BNL With Nuclear Therapies

When we lose someone to cancer, certain questions come to mind: Why couldn't modern medicine help them? What could they, or we, have done differently to prevent such a horrible fate?

The answers to these questions are never easy. I asked them myself when my father died of lung cancer this past summer. Most often, the only thing that we, the survivors, can do is accept our loss and move on.

In my case, though, I am fortunate enough to be in a position to do more. I am not only the son of a cancer victim — I am also a scientist working to fight cancer.

My research at Long Island's Brookhaven National Laboratory has brought me face to face with one of the most dreaded and swift-killing cancers of them all: a type of brain tumor known as glioblastoma multiforme.

For the last 12 years, I've worked to combat this brain tumor. Even with the best medical treatments currently available, it kills most of its victims in nine months or less, in a horrible decline filled with seizures, comas and blackouts. The impact on the victim and the family is heart-rending. The strongest radiation therapies and chemotherapy, which may cure other cancers, have little effect on this one.

My colleagues and I confront this killer everyday when we treat patients at Brookhaven's Medical Research Reactor with an experimental therapy for glioblastoma. Since 1994, we have used the reactor to treat 27 patients, including several Long Islanders. Many of them have literally begged for the opportunity to try our therapy, which is called boron neutron capture therapy or BNCT. We continue to receive dozens of calls a month from patients who want desperately to be treated at the reactor.

Our treatment is still in the experimental stage; we don't yet know the extent of BNCT's effectiveness. But it has already given patients a better quality of life than they would have had with conventional treatments, and we're hopeful that with further research it may even extend future patients' lives well beyond those fateful nine months.

Decades of research went into preparing today's clinical trials of BNCT. I have spent many long years perfecting the substance that helps the reactor's radiation have a stronger killing effect on the cancer cells. Throughout this process, the research has been scrutinized by other scientists before we can publish any results or make any claims.

And, perhaps most importantly, the U.S. Food and Drug Administration, or FDA, has approved our studies and is monitoring our progress. The same will be true if the preliminary studies already under way are successful, and we are able to apply BNCT techniques to lung cancer and leukemia.

My colleagues and I are gratified by the promising results we have obtained so far. My father shared my pride in our work in the battle against cancer.

But my pride is dimmed when I read that some people want to shut down the reactor where we treat brain tumor patients. The reactor opponents say that nuclear technology, in any form, is inherently immoral. But cancer research is proof that nuclear reactors can be put to good, possibly life-saving, uses. I cannot describe my anger when people accuse us of causing cancer with the same reactor we use to treat cancer!

Doctors all over America use radiation safely thousands of times everyday to do everything from diagnosing heart problems to treating cancer — surely none of us would deny those thousands of patients the tests and treatments they need. If I ever need one of those tests or therapies, I will thank science and medicine for developing them and hope that we can continue to resist the anti-nuclear extremists who would banish them.

I know that there's a lot of misconception out there about Brookhaven's reactors. With all the wild claims that have been made in the local press recently, it's no wonder that most people are confused about whether to call for the reactors' shutdown or not. I hope that my story has convinced you that these reactors most definitely need to remain open so that we can continue our important research.

But to help you further, here are a few facts. Our two research reactors are nowhere near the size or power of nuclear power plants, and their purpose is much different. We've operated them safely for decades; and hundreds of scientists come from universities and industries all over the world to use them. They are some of the most respected scientific facilities in the world, and they are right here on Long Island.

Our reactors are not at all related to nuclear weapons and neither do we use them for defense research or weapons development. Brookhaven's research is and has always been carried out for the good of humankind.

Scientists have used Brookhaven's reactors to study the space-age materials like superconductors that will help power America in the next century.

If you know someone who's had heart problems, you can thank Brookhaven's reactors for the radioactive thallium that their doctors gave them during their heart stress test. Our reactor research has helped in the development of the plasminogen activators that heart attack victims receive to prevent dangerous blood clotting after a heart attack. Radioactive materials are used everyday to image cancers and other diseases in every major hospital in the world. The research that made this remarkable technology possible was carried out at Brookhaven's reactor.

In short, my research is just one of the valuable things that go on at the Brookhaven Lab reactors. But we would have no right to do that research if we didn't also operate those reactors safely and with the utmost concern for our neighbors and the environment. We do.

And there are many regulatory agencies who can back up that statement independently. The amount of radioactivity released to the environment by Brookhaven's reactors is exceedingly small, almost lost in the sea of natural background radiation all around us.

Those activists who are opposed to reactors twist the facts and bolster their arguments with "statistical proof" that the Brookhaven reactors are harmful. You know what Mark Twain said about statistics: "There are three kinds of lies: lies, damn lies and statistics."

The first patient we treated, back in September 1994, sent me a framed print of a quote from the Koran: "To save a single life is as if to save the entire world." I keep this print on my wall. This is what we are trying to do in our work at the Medical Reactor, to relieve suffering, to offer people with a terminal disease a ray of hope, to save human life.

Those activists who say they're helping Long Island by trying to shut down our reactors are only hurting all of us. I can only imagine what the reaction of our patients would have been if they had hoped to be treated with BNCT, but found a "closed" sign on the door of the medical research reactor.

We would have had to tell them that their fate had been sealed by the actions of a few fringe extremists, who were willing to condemn them and many other cancer patients to death in order to rid the world of reactors and more conventional radiation therapy facilities.

This Letter to the Editor by ***John Skinner****, a programmer/analyst in the Biology Department, appeared in* Suffolk Life *on February 19, 1997.*

We Still Drink the Water

Dear Editor:

I was quite shocked when I glanced at the cover of the February 5 edition of *Suffolk Life* and saw in large bold letters the headline that read "Permanent Shutdown of BNL Sought." I immediately turned to the page listed and saw an article entitled "Permanent Shutdown of BNL Reactor Sought." Only slightly relieved that the cover headline was inaccurate, I proceeded to read what turned out to be a fairly well-balanced article in which Suffolk Legislator Michael Caracciolo (R-Riverhead) called for an indefinite shutdown of BNL's High Flux Beam Reactor (HFBR). The story quotes him as saying "I want BNL to get a handle on this. . . . Then and only then, should it be permitted to reopen the reactor." What he was calling for is exactly what BNL said it would do back on January 18 — shut down the reactor until the problem was understood and corrected. . . . . In any event, nowhere in the article did he call for a permanent shutdown of anything.

It makes little difference whether the headline was simply a careless misinterpretation of an inaccurate title or a "teaser" to get people to open the paper to read further. In either case, it was a disrespectful insult to the 3200 people who work at the Lab.

It's ironic. *Suffolk Life* seems sincerely concerned with issues that affect employment and the economy of this region. Almost every issue contains an article concerning development proposals for the Calverton site vacated by Northrup Grumman. These stories often cite the number of jobs that could potentially be created and the amount of revenue that would be brought into the Long Island economy. Yet on the same page, an incorrect headline is haphazardly printed concerning the closure of Long Island's fourth largest high-tech employer.

An independent report by the Suffolk County Planning Commission found that in 1995 alone the Lab's total spending of $416 million caused a $797-million increase in Long Island's output and created more than 13,000 secondary jobs. Nothing that I've seen proposed for Calverton even comes close. And you can bet that those contemplating investing in the development of the Calverton site are watching very closely how the nearest large industrial site, BNL, is being treated by the local politicians and press.

Despite the Lab's vitality to the local economy, its true value lies in the scientific discoveries and development of new technologies that are available to us in many ways. One example is the 40,000 diagnostic nuclear medicine procedures performed per day in the U.S. that employ two isotopes that were developed at BNL. These two isotopes alone have already saved millions of lives. These discoveries would not be possible without the type of work done at our two research reactors, the largest of which, in terms of thermal power, is about one hundredth the size of a large nuclear power plant. In addition to AIDS and cancer research that is of world-wide concern, the Lab also focuses on problems that are relatively unique to this region, such as Lyme disease and Brown Tide.

Although a handful of very vocal activists would have you believe otherwise, the benefits of having a world-class research facility in our region are not gained at the expense of the health of our residents. Nothing impresses this fact stronger upon me than when I pick up my 3- and 4-year old children from the BNL on-site day care facility and see scientists who perform their research at the reactor doing the same. They trust the Lab with their children's health because they understand its operations and know that it provides a safe environment for its employees and the surrounding communities.

My children and I drink water pumped from wells at the Lab. With all of the recent press concerning tritium contamination of groundwater on the Lab's property, your readers might be surprised to know that we do not glow in the dark. I am comfortable with drinking the water because I understand the fact that the contamination is limited to a very narrow plume that extends only about 400 feet from the reactor building.* Groundwater in that area travels South at less than one foot per day. The wells that supply BNL's drinking water are located North of the reactor. The public also should not worry about their drinking water. Since the small area of contamination is about 1.5 miles away from the Lab's Southern border, it will take over 20 years for the tainted water to move off site. Of course, the Lab will clean up the contaminated area before it is allowed to spread.

Lately the press has been having a field day with the numbers that describe, in terms of the Federal drinking water standard, the levels of tritium contamination found in the test wells. Not once have I seen an explanation of what those numbers mean in terms that most people can relate to. Our Federal limits for drinking water are extremely low. Even if your only source of drinking water for an entire year was the most contaminated test well, with readings 30 times the Federal drinking water standard, your total extra radiation dose would only be about 10 percent of the natural background radiation that all Long Islanders receive each year. This is roughly equivalent to having three chest x-rays in a year.

I find it sad that some politicians, environmental extremists, and others choose to exploit the Lab for their own gain. In doing so, they needlessly scare the residents of the East End at the expense of the dedicated staff of BNL. This needs to stop before the BNL site becomes the next "Calverton."

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* *Editor's note: At present, the plume is known to extend more than 1,100 feet south of the HFBR.*

See Supplement for continuation of story on page 3, other news and classified ads.

Got a Problem? They Can Help!

(continued from page 3)

•• your department or division's **Equal Opportunity Representative,** who serves as a liaison to the Diversity Office.

•• a member of the **Affirmative Action Advisory Committee** (see photo on page 3).

•• Merdon also serves as **Women's Program Coordinator**. For addressing the employment concerns of women, contact her at Ext. 3318.

• **Employee Assistance Program** — Clinical psychologist Joseph Gisondo manages this program, which can assist employees with mental health problems affecting job performance, provide information on mental health issues, and offer counseling for such difficulties as alcohol and drug abuse, and family, marital or personal problems. For free confidential counseling on site with either Gisondo or clinical psychologist Dianne Polowczyk, call Ext. 4567.

• **Employee Relations Committee (ERC)** — This eight-member committee is dedicated to helping non-bargaining-unit, nonscientific employees solve work-related problems that they have not resolved with their supervisors. The ERC, which is responsible to the Laboratory Director, reviews employees' complaints and attempts to hear all sides of an issue before making a recommendation. Everything is kept completely confidential, and no action is pursued without the complete agreement of the employee involved.

To bring a problem to the ERC's attention, call its special number, Ext. 4005, or contact a current member. See photo above for names and telephone extensions.

• **Employee Relations Counselor** — Susan Foster holds this position and is available to talk to non-bargaining-unit employees about work-related problems. Foster is also responsible for coordinating the **Employee Concerns Program**, which handles issues related to mismanagement, gross waste of funds, abuse of authority, and environment, safety and health (see story on page 3 for more details and other avenues to take concerning these issues). Contact Foster in the Human Resources Division, Bldg. 185, Ext. 2888.

• **Office of Environmental Restoration** — If you have questions about the Laboratory's Superfund activities, this office can help you. (See story on page 3 for details.)

• **Rumor Hotline** — Leave a message on the Rumor Hotline, Ext. 2752 — ASK1 — to have rumors about the Lab verified by the Public Affairs Office, which runs this service. Many callers are disinclined to leave their names and extensions without which the call cannot be answered, but remember: It is perfectly understood that to inquire about a rumor does not mean that the questioner started the rumor. Also, Public Affairs keeps the employees' identities completely confidential. As a last resort, simply state the rumor without giving your name — if sufficient numbers of employees call about a particular concern, then it may be possible to address the issue in the Bulletin.

• **Tune In! —** The Tune In! program, run by the Editor of the Brookhaven Bulletin, gives employees a confidential means of directing questions or complaints to members of management, who then respond in writing. The bright orange and white Tune In! forms should be found in special boxes in most buildings. If your building's box is empty, or if you can't find a box, call Public Affairs, Ext. 2345, for forms. You can also send a Tune In! via e-mail to acohen@bnl.gov, or access Tune In! on the World Wide Web, at http://www.pubaf.bnl.gov/tune_in!.html.

Roger Stoutenburgh

The new Chair of the Employee Relations Committee (ERC) is Pat Fox (front, second from right), Department of Applied Science, Ext. 2939, Bldg. 179A; outgoing Chair (front, right) is William McGahern, Alternating Gradient Synchrotron (AGS) Department. ERC members include: (front, left) Sue-Ellen Gerchman, Biology Department, Ext. 3417, Bldg. 463; (back from left) Neil Schaknowski, Instrumentation Division, Ext. 4261, Bldg. 535B; Conrad Koehler Jr., Chemistry Department, Ext. 4310, Bldg. 555B; Elizabeth McBreen, Physics Department, Ext. 5111, Bldg. 510D; Michael Kelly, National Synchrotron Light Source Department, Ext. 3476, Bldg. 725D; Grace Webster, Department of Advanced Technology, Ext. 3227, Bldg. 830; and Jon Sandberg, AGS, Ext. 4682, Bldg. 911A. Sandberg and Schaknowski are new members this year, while Marie Hicks (back right), Information Services Division, completed her three-year term at the end of last year. Not shown is ex officio member Susan Foster, Human Resources Division.

Road Closing

The truck route along East Princeton Avenue will be closed for about one month beginning Monday, March 3. Because this road has been prone to flooding, the road surface will be raised during the closure. Detour routes will be clearly marked.

Water Aerobics

Eight weeks of water stretching and exercise classes will again be offered at the Lab pool, Bldg. 478, from 5:20 to 6:10 p.m., on Tuesdays and Thursdays. The first classes will be on March 4 and 6, respectively.

Sponsored by the Health Promotion Program of the Occupational Medicine Division, water aerobics classes are free, but participants must pay the pool fee of $2 a session or show their season pool pass. Employees and their spouses may sign up for one or both classes by calling Mary Wood, Ext. 5923.

Arrivals & Departures

Arrivals

Brian J. Bukala.....AGS
Stanley J. Yakaboski Jr......AGS

Departures

This list includes all employees who have terminated from the Lab, including retirees:

Leo J. Casey.....Information Services

Cooking Exchange

On Monday, March 10, at 6 p.m. in the Recreation Building, the Hospitality Committee invites all on-site residents, their spouses and friends to the next meeting of the Cooking Exchange. Bring a favorite dish to share with others, as well as an appetite to sample culinary delights from around the world. For more information, contact Vicky Chang, Ext. 1064.

Archery Club

The Archery Club will hold its next monthly meeting on Thursday, March 6, at noon in the large seminar room, Physics, Bldg. 510. New members are always welcome. For more information, call Bill Schoenig, Ext. 2377.

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position. Consideration is given to candidates in the following order: (1) present employees within the department/division and/or appropriate bargaining unit, with preference for those within the immediate work group; (2) present employees within the Laboratory; and (3) outside applicants. In keeping with the Affirmative Action plan, selections are made without regard to age, race, color, religion, national origin, sex, handicap or veteran status.

Each week, the Human Resources Division lists new placement notices, first, to give employees an opportunity to request consideration for themselves through Human Resources, and second, for general recruiting under open recruitment. Because of the priority policy stated above, each listing does not necessarily represent an opportunity for all people.

Except when operational needs require otherwise, positions will be open for one week after publication.

For more information, contact the Employment Manager, Ext. 2882, or call the JOBLINE, Ext. 7744 (344-7744), for a complete listing of all openings.

Current job openings can also be accessed via the BNL Home Page on the World Wide Web. Outside users should open "http://www.bnl.gov/bnl.html", then, under "Information," select "Jobs." For scientific staff openings, select "Scientific Personnel Openings"; for all other vacancies, select "General Personnel Openings."

SCIENTIFIC RECRUITMENT - Doctorate usually required. Candidates may apply directly to the department representative named.

POSTDOCTORAL RESEARCH ASSOCIATE - Trained in chemistry, for studies on the synthesis and characterization of electroactive and photoresponsive polymers. Experience in organic synthesis, polymer synthesis, polymer physics, and characterization of ion-conducting and photoresponsive polymers is required, as well as a background in the identification of polymer products and the application of techniques such as NMR and FTIR. Contact: James McBreen, Department of Applied Science.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

DD 3645. SECRETARIAL POSITION - (temporary appointment) Requires an AAS in secretarial science or equivalent, a working knowledge of Laboratory policies and procedures and demonstrated excellent communication skills. Familiarity with WordPerfect 6.1 for Windows (tables and equations) and graphic software for presentations, and the ability to work with tight schedules and on parallel projects are highly desirable. Will perform complex secretarial duties for the Deputy Division Head of the Engineering Research and Applications Division. Duties include preparing technical reports, handling correspondence (some of which may be confidential), preparing BNL forms, arranging both foreign and domestic travel, ordering supplies and maintaining office files. Department of Advanced Technology.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

DD 3104. TECHNICAL POSITION - (term appointment) Requires an AAS in electronic technology or equivalent and significant relevant experience. Will assemble, test and troubleshoot complex electronic circuits, including rf, analog and digital, for the RHIC RF Group. Must be able to work from schematics, mechanical drawings and verbal instruction. RHIC Project.