Meetings Address Issues Related to Health of BNL Employees

Topics Include: *Lab's Environmental Emissions, Radiation Doses to Workers, DOE-Initiated Assessment of Cancer Incidence Among BNLers*

Two meetings on employee health issues were held yesterday as part of a continuing effort by the U.S. Department of Energy (DOE) and BNL management, including Associated Universities, Inc., and Brookhaven Science Associates, to keep BNLers fully informed about Laboratory activities and how they may affect employees and retirees, as well as the Lab's neighbors and the environment.

Among the issues discussed at the meetings were: the Laboratory's emissions to the environment, the evolution of radiation-dose limits, BNL radiation doses to Lab workers, and an assessment that DOE has initiated with the New York State Cancer Registry to look at the incidence of cancer among BNL employees, past and present.

DOE has no reason to believe that the cancer incidence at BNL is unusual in any way, and recent yearly epidemiological reports based on data from Brookhaven's Occupational Medicine Clinic have supported this belief.

"However," said Dean Helms, Executive Manager of DOE's on-site Brookhaven Group, "the assessment will give DOE a more comprehensive indication of whether cancer among Lab employees falls within normal ranges or whether the subject should be looked at further. It is also an important part of our commitment to inform BNL employees, retirees and neighbors about environmental and health issues at the Laboratory."

Worker Cancer Assessment

Since 1992, the Occupational Medicine Clinic has been providing data regarding illnesses and injuries that cause Lab employees to call in sick for five days or more to DOE's Office of Epidemiologic Studies (OES). OES has been conducting an epidemiological surveillance of employees at several DOE sites, including BNL.

Cliff Strader, an epidemiologist with OES, came to BNL Thursday to participate in the employee meetings. He said that available data collected in this surveillance do not suggest that current Brookhaven workers are experiencing an increased risk of cancer, but that surveillance data provide only a limited assessment of worker health. OES has released these findings in reports for 1992 through 1994. They are available for viewing on the OES Internet home page at http://tis-nt.eh.doe.gov/epi.

Because OES's epidemiological surveillance covers only the most recent few years, DOE began pursuing a more comprehensive assessment in late 1996, when the Brookhaven Group and BNL inquired about conducting an epidemiologic study of Laboratory employees.

Much of the time since then has been spent working with BNL's Human Resources Division to create a computerized database of all of BNL's 21,263 current and former employees. The database includes each person's life number, name, residential address, social security number, job title, pay type (hourly or salaried), date of first hire, date of most recent hire, date employment ended, generic reason that employment ended, gender, race and date of birth. This database has been provided to OES, which, Strader said, will treat it with the utmost confidentiality.

He explained to the two groups of employees assembled in Berkner Hall that, under a Memorandum of Understanding between DOE and the U.S. Department of Health & Human Services, OES can request that the National Institute for Occupational Safety & Health (NIOSH) consider doing a health study of BNL workers. More detailed information about cancer rates among past and current Brookhaven workers would be valuable in NIOSH's consideration of whether to undertake a full study, Strader said.

To get a more complete determination of cancer rates among Brookhaven workers and to assess whether these rates are different from those of the surrounding population, Strader said, OES has requested the assistance of the New York State Cancer Registry. The Registry collects information on cancer incidence and mortality from doctors and hospitals statewide, storing this information in a computerized registry that is complete from 1979 to 1993.

Keeping all information completely confidential, Strader stressed, the New York State Cancer Registry has agreed to compare the BNL roster with its automated database and to calculate cancer rates for BNL workers.

Using a copy of the roster provided by the Office of Epidemiologic Studies, Registry staff will compare these rates with those of residents of New York State as a whole and with rates among residents of Long Island, with Suffolk and Nassau Counties combined. They will provide a final report evaluating whether BNL workers have higher cancer rates than expected.

Among the limitations of the Registry's assessment, noted Strader, are the facts that it will not include cancers diagnosed before 1979 or after 1993, cannot determine if cancers are occupational and will not include cancers of former BNL workers diagnosed out of state.

Strader said that results from the Registry's evaluation are expected to be available by early summer. In the interests of confidentiality, the Registry will provide only summaries of data to DOE.

When results are available, Helms said, "We will share the results and their significance with Laboratory employees, retirees and the outside community."

BNL Emissions to Environment

Following Strader's presentation, Gary Schroeder, a health physicist in BNL's Safety & Environmental Protection Division (SEP), spoke about BNL's environmental emissions.

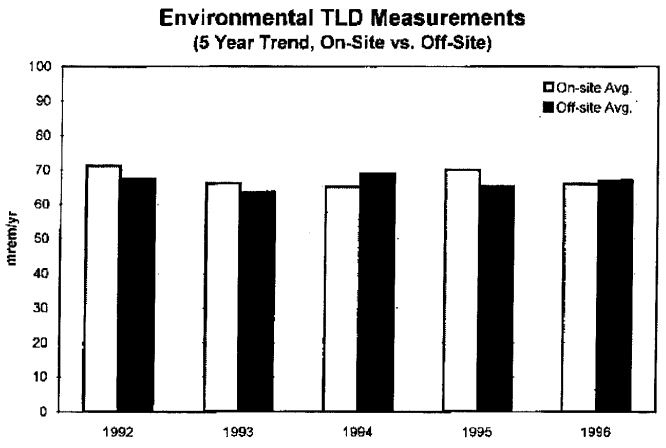
"Some research facilities at BNL either use or produce radioactive materials," Schroeder said. "Any radioactive releases as a by-product of these processes are in accordance with the rules set forth by DOE, the U.S. Environmental Protection Agency (EPA), New York State and Suffolk County."

He noted that BNL has monitored environmental emissions and reported them annually to county, state and federal governments since 1971.

"The potential effect of a radiation exposure depends on the dose, and regulatory agencies set dose limits well below the levels at which an observable health effect could be expected," Schroeder said.

Everyone living in the United States automatically receives an annual radiation dose of about 300 mrem from natural background radiation, said Schroeder. Sources of this background radiation are: food, about 39 mrem/yr.; soil and rocks, about 28 mrem/yr.; cosmic rays from the sun and outer space, about 28 mrem/yr.; and radon gas, about 200 mrem/yr. The quantity for radon can vary depending on location, type of home and whether the home has a basement.

How are environmental radiation levels measured? Schroeder explained that BNL maintains a network of 24 on-site and 25 off-site thermoluminescent dosimeters, the same technology used in the badges that BNL workers wear.



Radiation doses measured both on and off site from 1992 to 1996 are statistically the same, from about 60 to 70 millirems a year — right in line with national standards for terrestrial and cosmic rays.

When compared against known background radiation levels, quarterly collection of data from these dosimeters has verified that Lab operations have no impact on the off-site radiation environment, and the data indicate that measured exposures are due to natural radiation only.

With two on-site exceptions, Schroeder said that the dosimeter network shows no difference in average annual exposure values for on- and off-site stations. The two on-site exceptions are the old hazardous-waste management area, which is now out of service, and the area south of the Alternating Gradient Synchrotron (AGS) and outside of Bldg. 197, where exposure values range from 10 to 20 mrem/yr. above background.

The BNL facilities that release radioactive materials, said Schroeder, are the High Flux Beam Reactor (HFBR), the Brookhaven Medical Research Reactor, the AGS, the Brookhaven Linac Isotope Producer (BLIP), the facility in Bldg. 801 that processes targets for BLIP, the tritium evaporator housed in a building at the base of the HFBR, the incinerator at the waste-management facility and various laboratory hoods around the site.

The emissions from most of these facilities are airborne. Schroeder cited the main radioactive gases that are released to the air as: argon-41, which has a half-life of two hours; oxygen-15, half-life two minutes; and tritium, half-life 12 years. He added that several dozen other radionuclides may be released in very small quantities — thousands to millions of times less than the three main releases.

Looking back, Schroeder said, the most significant historic airborne release point at BNL was the Brookhaven Graphite Research Reactor (BGRR), a 20-megawatt, air-cooled research reactor that ran from 1950 until 1968. The principal radionuclide released from the BGRR was argon-41, via the red-and-white stack now used for the HFBR.

Depending on their locations, employees on site at that time could realistically have received doses of radiation from BGRR emissions of up to about 8 to 19 millirems a year (mrem/yr.), Schroeder said. To put that in perspective, the federal limit for the amount of radiation a member of the public could receive was then 500 mrem/yr.

Airborne emissions from current operations at BNL would contribute less than 1 mrem/yr. to the radiation dose of a person working outdoors at the Lab 24 hours a day, Schroeder said. The current public dose limit is 100 mrem/yr.

Since the late 1960s, "The only significant liquid radiation release to the environment from BNL facility effluents has been tritium," Schroeder said, noting that tritium is a by-product of HFBR operations.

Tritium in liquid effluent is discharged to the Lab's sanitary system, where it eventually enters the Peconic River via the sewage treatment plant. A total of about one to three curies of tritium has reached the Peconic annually in the last decade, well below the EPA guideline.

In conclusion, Schroeder mentioned that BNL operates six on-site drinking water wells that are tested quarterly for radioactive parameters, as well as a full range of chemical contaminants.

Additionally, a tap water sample is tested daily for tritium.

Testing of the BNL water supply has been routine since the 1960s, he said, and radioactivity in the drinking water has never exceeded or approached the limits specified by the Safe Drinking Water Act.

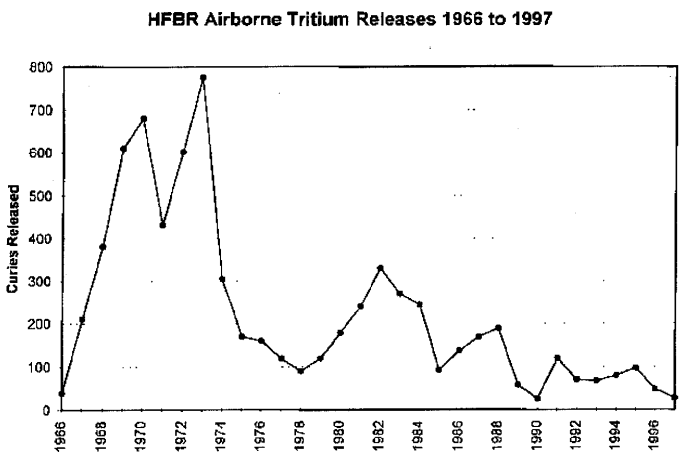
Evolution of Dose Limits

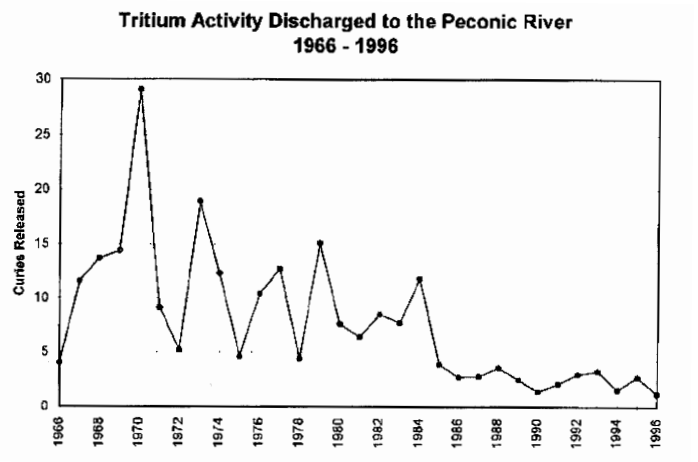
Senior Scientist Charles Meinhold of the Department of Advanced Technology spent the next few minutes explaining why radiation-dose limits to the public and to radiation workers have gotten smaller over the years.

Among the organizations concerned with recommending dose limits today are: the National Council on Radiation Protection (NCRP) & Measurements, of which Meinhold is currently president, and the International Commission on Radiological Protection (ICRP), of which he is vice chairman. Other organizations that review scientific data on radiation risks are the United Nations Scientific Committee on the Effects of Atomic Radiation, of which he is an advisor to the U.S. delegation, and the National Academy of Science's Committee on the Biological Effects of Ionizing Radiation.

Meinhold said that these groups now formulate limits based on "much better knowledge than was available during World War II," when man-made radiation became a factor in work environments. Because the threshold for radiation skin burns was 0.1 rem/day, that became the post-War dose limit.

Thinking began to change in the early 1950s, Meinhold recalled, as those responsible focused their attention on genetic effects. So, in 1956, a formula was introduced to prorate workers' lifetime exposures to: 5 × (age-18) rem, with a limit of 3 rem per quarter. Thus, a 58-year-old worker's





As shown in these charts of (left) airborne releases of tritium from the High Flux Beam Reactor (HFBR), 1966-97, and (right) tritium discharged to the Peconic River from the Lab, 1966-96, BNL's airborne and liquid tritium releases to the environment have both been declining since the early 1970s.

lifetime dose limit would have been 200 rem (200,000 mrem).

In 1977, with firmer statistics about leukemia and solid cancers among the survivors of the atom bombs dropped on Japan during World War II, regulators held worker dose limits at 5 rem/yr. (5,000 mrem/yr.) and eliminated the allowance of 3 rem/quarter.

With new information about the Japanese survivors that became available in 1990, the NCRP and ICRP began to base limits on the risk to the worker who received the maximum allowable dose, rather than average doses. The result was that, today, the NCRP recommends a lifetime limit for radiation workers based on the formula: 1 × age rem, meaning that a 58-year-old worker's limit would be 58 rem. ICRP recommends a limit of 2 rem/yr. for workers. Both of these recommendations ensure that no worker exceeds 100 rem in a lifetime.

BNL Radiation Dose Records

The final speaker was George Holeman, a health physicist with SEP's Personnel Monitoring Group, who focused on how BNL has kept track of radiation workers' exposures over the years.

Throughout the Lab's history, this has remained constant: Radiation workers have had monitoring devices to wear all the time while at the Lab, and others have had to wear them when visiting a radiation area.

What has varied over the years, Holeman said, are the types of monitoring devices and methods of record-keeping.

From the beginning of BNL until 1974, he recalled, workers wore film badges. Personnel monitoring staff processed the film at the Lab and kept records of exposures manually. For the next ten years, film continued to be processed in house, but results were transferred to BNL's main-frame computer.

This changed again in 1984, when the Lab began to use a commercial film-badge service, which maintained its own database of results. Though BNL discontinued this service in 1994, the Laboratory still has access to those records.

In 1995, film badges were replaced by thermoluminescent dosimeters, and Personnel Monitoring has been operating an in-house TLD service, accredited by DOE under its dosimetry-accreditation program. Records are now available on a computerized database on the SEP network.

The exposure records, each of which will be kept for 75 years, do not include medical or other non-occupational exposures that workers may have received.

For the years 1993-96, Holeman said, records from control dosimeters in badge racks show that two-thirds of BNL's approximately 3,000 employees got no exposures. For the 1,000 whose dosimeters recorded some dose, the averages were: 0.084 rem for 1993, 0.107 rem for 1994, 0.150 rem for 1995 and 0.08 rem for 1996 — as compared to the BNL administrative control level of 1.25 rem/yr. and the DOE administrative control level of 2 rem/yr.

During those same years, the maximum doses received by any employees were: 1.03 rem in 1993, 1.61 rem in 1994, 1.208 rem in 1995 and 1.103 rem in 1996. Even though the employee who received 1.61 rem in 1994 was over BNL's current administrative control level, he was below the DOE administrative control level and remains within DOE's lifetime guidance figures. Recalling our "average" 58-year-old worker, Holeman said, his lifetime dose should have been no more than 58 rem.

The vast majority of BNL workers through the years have fallen well within the guidance for lifetime radiation dose. About 25 had documented lifetime doses in the range of 40 to 80 rem. These lifetime doses are still below the lifetime exposure of 100 rem that formed the basis for the most recent NCRP and ICRP recommendations, as well as the DOE administrative control level.

Holeman said that employees who are issued dosimeters receive annual summaries of any radiation exposures.

Anyone with questions about dosimeters or other issues related to personnel monitoring, is encouraged to call Holeman at Ext. 7221.

— Anita Cohen

Pavel Rehak (cont'd.)

foremost intellectual resource in solving any instrumentation and measurement-related problem arising in experimental sciences from physics to biology."

Rehak's work has benefited the programs of the whole research community that uses semiconductors and gaseous particle and photon detectors. His most important contribution has been the unconventional idea and very successful realization of the silicon drift detector (SDD), with Emilio Gatti.

The SDD has had a worldwide impact in charged-particle tracking. First used at CERN, the European laboratory for particle physics, in two experiments at the Super Proton Synchrotron, the innovative concept of the SDD has made possible the silicon vertex detector for the STAR experiment at BNL's Relativistic Heavy Ion Collider.

SDD has inspired, among other things, a new type of charged coupled device as an imaging x-ray detector for astrophysics experiments at Germany's Max Planck Institute, and a high-resolution silicon x-ray detector, on which industry is basing electron microscopes that analyze traces of elements by x-ray fluorescence.

Other contributions by Rehak include his technique to reduce significantly a serious shortcoming in gaseous position-sensitive detectors — line broadening due to parallax that occurs in diffraction experiments using x-rays and neutrons. He has also collaborated at BNL, in Germany and in Italy, on forefront design and development of detector electronics.

After earning a doctoral RNDr degree in 1969, in natural sciences, at the University of Prague, Czechoslovakia, Rehak obtained a second Ph.D., in high-energy physics, at the Scuola Normal Superiore, Pisa, Italy, in 1972. He spent two years doing research at Kernforschungszentrum, Karlsruhe, Germany, then, on joining Yale University, was assigned to CERN. In 1976, he came to BNL's Physics Department as an associate physicist. Promoted to Physicist in 1979, he transferred to Instrumentation in 1994. He was awarded tenure in 1997.

Jerome Hastings (cont'd.)

for people embarking on the construction of new facilities."

A member of the NSLS Department since its inception in 1982, Hastings was instrumental in shaping much of its range of science. He has authored and co-authored many seminal papers describing innovative instrumentation for new types of experiments using synchrotron radiation, including milestone publications pertinent to the development of beam lines and programs at the NSLS and elsewhere.

Among Hastings' most notable achievements was the most-copied beam line design, which involved a monochromator and grazing incidence focusing mirror. When he first built it in 1978, it was an innovation — now, it is the standard configuration.

Hastings played a significant role in the development of several techniques that are now widely used in facilities around the world, for example, high-resolution powder diffraction, inelastic x-ray scattering and nuclear forward scattering. He also proposed the use of soft x-ray reflectivity as a new tool for materials science studies, particularly in investigating magnetic structures.

Hastings and collaborators teamed in the world's first use of a synchrotron to perform direct Mössbauer spectroscopy in August 1990, on beam line X-27 of the NSLS x-ray ring. He serves on advisory panels for major new synchrotron radiation facilities in France, Korea and Japan.

Hastings earned his Ph.D. in applied physics at Cornell University in 1975, also working 1974-76 as a metallurgist at Oak Ridge National Laboratory. Then, he spent a year as a research associate at Stanford Synchrotron Radiation Laboratory. During the period 1973-77, he was also a guest scientist with the BNL Physics Department. In 1977, Hastings joined Physics full-time as an assistant physicist, moving to the NSLS in 1982. Granted tenure in 1986, he was named Senior Physicist in 1991. He is a fellow of the American Physical Society and a member of the American Crystallographic Association.

Suffolk County Task Force Finds No Link Between BNL and Cancer

According to the report of a study released yesterday by the Suffolk County Environmental Task Force on BNL, "cancer rates of all types of cancers [the task force] studied are not elevated near BNL" for the years 1979-93.

Task Force Chairman Roger Grimson, who is a biostatistician and an associate professor at the State University of New York at Stony Brook, concluded, in a *Newsday* article by Charlie Zehren that ran last Friday, "There is no link between Brookhaven National Lab and cancer."

The Task Force was created last spring by the Suffolk County Legislature. Their report specifically addresses two types of cancer: breast cancer and the childhood cancer called rhabdomyosarcoma.

Regarding breast cancer, the study found that, compared to the rest of Long Island, rates are rising significantly, and more quickly, on the Island's East End, on both the North and South Forks.

As *Newsday* reported: "Concerning breast cancer, Grimson said, the study does not implicate Brookhaven National Laboratory or any other particular facility or cause and noted that the breast cancer rate in the area immediately surrounding the lab is lower than on the North and South Forks."

Regarding rhabdomyosarcoma, the study says that there is no statistical evidence showing higher than normal rates in either Suffolk County or a 15-mile radius of the Lab. In fact, there were fewer cases of rhabdomyosarcoma in Suffolk County from 1979 through 1993, than there were on average in other New York State counties, including Nassau, Brooklyn and Queens.

According to the New York State Health Department, Grimson said in *Newsday*, for each million people under age 19, rhabdomyosarcoma occurred annually at a rate of 4.1 cases in Suffolk. The incidence rate was 5.3 per million statewide, 5.6 in Nassau, 6.4 in Queens and 7.0 in Brooklyn.

Regarding critics of the study, *Newsday* reported that Grimson said, "All I can say is let the critics seek the same data and analyze it for themselves. They will get the same results."

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Human Resources Transition Team

Employee Briefings Scheduled for Next Week

During the transition to BNL's management by Brookhaven Science Associates (BSA), BSA's Human Resources (HR) transition team is providing Lab employees with updates on what you can expect and answering your questions.

Following the distribution of BSA offer letters, employees have been quick to return their signed offer packages. Within 24 hours of commencing distribution of BSA employment offer packages, over 50 percent of BNL employees had signed and returned their forms to department contacts.

If you're among those who have not yet signed and returned your offer package to your department administrator, please do so by the close of business next Friday, February 6.

Monitoring the distribution, the HR Transition Team was pleased to learn that many employee concerns had already been answered. Those who raised specific questions were referred to the appropriate HR Transition Team member; given the Hotline telephone number, Ext. 8200; or reminded that a separate retirement package, due to be mailed to employees on January 29, should answer many remaining questions. These efforts on the part of department contacts warrant our thanks and remind us all of the efficacy of BNL teamwork!

Lastly, aware that employees would like a transition update and that some may still have employment and benefit questions, the HR Transition Team has scheduled five briefing sessions, to be held in Berkner Hall next week, Monday through Thursday, starting February 2. You will be notified of your meeting time through your department or division contact.

A late afternoon session is scheduled for shift workers on Wednesday, February 4, at 4:30 p.m.

At these sessions, BSA and BNL staff will be on hand to tell you how the transition process is going, to give an update on HR Transition Team activities and to answer questions you may have about the BSA offer package and retirement plans. John Marburger, BSA President and BNL's next Director, will join us at these meetings as his schedule permits.

Following each presentation, HR Benefits staff will be available in Berkner Hall, Room D, to address employee questions and provide assistance on the retirement plan on a one-to-one basis.

Meanwhile, your Hotline and Question Box (located at the Employee Information Center in Berkner Hall) issues continue to be a focus of our attention. Recent questions include:

Q: *As retirees, we are concerned about our health insurance coverage. Will it change under BSA?*

Medical coverage for retirees will remain the same, with minor changes to accommodate differences in state and federal laws. To provide further information, Denise DiMeglio, BNL Benefits Manager, and John Ennis, Battelle Benefits Manager, will attend the Brookhaven Retired Employee Association (BREA) meeting scheduled for February 10, at 3:30 p.m. in Berkner Hall, Room B.

In addition, a letter containing benefits information will be sent to former employees, employees on approved leave of absence and the families participating in BNL benefits programs.

Q: *Will the Lab continue to contribute 10 percent of salary to the regular retirement program?*

Yes, BSA will continue to contribute 10 percent to the regular retirement program for eligible employees.

Q: *The Employee Patent Agreement refers in item number 6 to a review of "non-classified material that I am desirous of publishing concerning or arising from work carried on by me in the course of my employment by BSA" prior to transmitting copy to the publisher. Who do I refer this material to?*

Except for substituting the initials BSA for AUI, the Employee Patent Agreement remains the same as the one employees signed under AUI. Similarly, the procedure alluded to in the question remains the same. Employees should submit manuscripts for review, together with a completed "Publication Review Form," to their Department Chair. Once approved, the form is forwarded to the Research Library.

Q: *When I call the Hotline, I get a recording. How can I speak to a person?*

If you feel comfortable leaving a message, this allows us to research your particular concern before responding to you. However, if you'd prefer not to leave a detailed message, simply leave your name and telephone number, and we'll call you back.

Roger Stoutenburgh

Last week, Brookhaven Science Associates sent all BNL employees offer packages, which must be signed and returned to your department administrator by the close of business next Friday, February 6. Among the early birds returning their groups' signed offer packages to (from left) Louisa Barone, Bonnie Miller and Darlene Peragine of the Personnel Records Group in BNL's Human Resources Division are (from right) Stephanie Lamontagne, Relativistic Heavy Ion Collider Project, and Richard Spellman, Central Shops Division.

Richard Hahn (cont'd.)

BNL's Chemistry Department as a research collaborator and joined Chemistry as a chemist in February 1987, to lead the U.S. team in the international collaboration that mounted the GALLEX solar-neutrino experiment.

This experiment, developed at BNL in the late 1970s, is performed in the Gran Sasso underground laboratory in Italy. GALLEX has measured the low-energy neutrinos from the sun, with important implications for physics — nuclear physics, astrophysics and particle physics.

However, the measurement methods were radiochemical. From 30.3 tons of gallium in the form of a 100-ton gallium-trichloride solution, about five germanium-71 atoms formed by captured neutrinos had to be separated, purified and collected each month with absolute accuracy.

Hahn and his group were responsible for many chemical aspects of GALLEX. Hahn also devised a major experiment to measure the strength of an intensely radioactive chromium-51 source used to calibrate the GALLEX detector and collaborated on developing a test of the radiochemical procedures using radioactive arsenic-71.

Hahn also played a central role in analyzing and publishing the GALLEX results. With his group, he is now responsible for several key chemical aspects of the Sudbury Neutrino Observatory (SNO) project, a new experiment located in a deep mine in Sudbury, Canada, and seeking definitive evidence of neutrino flavor oscillations.

Granted BNL tenure in October 1987, Hahn took his current title in 1994. His honors include the 1977 Radiation Industry Award of the American Nuclear Society for research on charged-particle activation analysis. He has repeatedly been elected an officer of the American Chemical Society's Division of Nuclear Chemistry & Technology, and has been vice-chair and chair of the National Research Council's Committee on Nuclear & Radiochemistry.

John Tranquada (cont'd.)

conductors were discovered. These ceramic compounds that lose all resistance to electricity at the relatively high temperature of 35 kelvins (-396°F) amazed and intrigued the scientific community.

Tranquada used x-ray absorption near-edge spectroscopy (XANES) at the NSLS and neutron-scattering techniques at the High Flux Beam Reactor to explore the behavior of these materials. In his first use of XANES in experiments to study the charge carriers responsible for superconductivity, his findings were contrary to then popular opinion. However, his work was instrumental in establishing what is now the accepted microscopic model of the high-T_c superconductors.

Then, in a series of neutron-scattering experiments, Tranquada and collaborators found key evidence that the materials that exhibit high-T_c superconductivity behave like electronically doped insulators.

Perhaps Tranquada's most important contribution has been to discover that the physics of high-T_c superconductors involves a mechanism called charge segregation, which enables coexistence of conducting and insulating properties. This work has helped establish that the local electronic structure of high-T_c superconductors consists of fluctuating strings of charge, information that is increasingly influencing current models of high-T_c superconductors.

Cited for outstanding scientific accomplishment in solid-state physics in 1988, Tranquada was a member of a BNL group that won a U.S. Department of Energy Materials Sciences Research Competition. In 1990, he was named Physicist, and he was granted tenure in 1992. He is a member of the American Association for the Advancement of Science and was recently elected to fellowship in the American Physical Society.

Communiqué From BSA (cont'd.)

issues or projects nobody wanted, "the really nasty ones."

He is enthusiastic about the opportunity to team once again with Brog and the new ES&H/Quality organization here at BNL, to support the science while achieving operational excellence and thereby regaining stakeholder trust.

Prior to joining Battelle, Mike managed environmental programs for Golder Associates based in Australia and Seattle, conducting environmental-remediation projects in the western U.S., Canada, Australia and southeast Asia.

"Performing environmental work outside the U.S. was a tremendous experience," he said. "These international projects were typically less driven by regulatory compliance than by technical outcomes and operational effectiveness — a good lesson for application to our domestic environmental regulatory programs."

Mike also has a strong technology and environmental-compliance background. During 1993, he led a PNNL team that successfully demonstrated an innovative soil-heating technology for DOE at the Savannah River site. He was a project manager for DOE's EM 50 In-Situ Remediation Integrated Program. Most recently Mike served as program manager for strategic planning at PNNL, and, in a second role, to Bechtel Hanford.

He has regulatory experience with the states of Washington and Oregon, acting as a civil and criminal investigator for hazardous- and solid-waste programs, and as a section chief for quality assurance with EPA Region X. His formal training includes a B.S. in chemistry/biochemistry from Eastern Washington University, and an M.S. in environmental science/chemistry from Western Washington University.

The goal of BSA's EM transition work is to provide for continuity of operations and a smooth handoff in responsibility from AUI to BSA. The EM transition team is focusing on the safety of existing operations and the overall readiness of environmental-restoration and waste-management programs during and immediately following transition.

Facility walk-downs, document reviews, staff interviews, and project/operational assessments will provide BSA with the basis for assuring DOE that the EM program is ready. The EM activities are being coordinated with the ES&H/Q and Facility & Operations transition teams so as to minimize disruptions of ongoing BNL work. The EM team will also be assessing the environmental-monitoring programs at BNL, with the intention of bringing together responsibility for monitoring programs under a new senior manager within the EM directorate.

— Robert McGrath
BSA Transition Manager

See Supplement for other news and for classified ads.