Nuclear reactor decommissioning under way

For more than 30 years, the Georgia Tech Research Reactor was used to train engineers to operate commercial nuclear power plants and as a research laboratory in the fields of biology, materials and medicine. In 1997 Tech decided to decommission the reactor because of the prohibitive cost of refurbishing the aging facility and the decline in demand for nuclear engineers and reactor operators. The removal of the reactor's fuel elements before the 1996 Olympics also accomplished a major task toward final decommissioning.

To get an update on the project's status, The Whistle interviewed Bill Miller, project manager for decommissioning the nuclear reactor.

Q: What does it mean to "decommission" the nuclear reactor?
A: Decommissioning involves a two-step process. The first step is disassembling the reactor support systems into smaller pieces so they can be packaged in drums for safe transport to a disposal site. The second part of decommissioning is removal of the reactor vessel itself and demolition of the large concrete shield. Again, these components are packaged for safe transport to a disposal site.

Q: What happens to the materials after disassembly?
A: Everything will be packaged for shipment to a processing plant in Oak Ridge, TN, or to a final disposal site in Barnwell, SC. In Oak Ridge, the material will be separated into two groups: radioactive contaminated material and material with no radiation. The Tennessee plant will segregate the material sent there and dispose of the radioactive material either at Envirocare in Clive, Utah, or at the Barnwell, SC, disposal site.

Q: When and how will these shipments be made?
A: Beginning in early January, Tech will send approximately two shipments of waste per week via sea-land containers on flatbed trucks. The shipments will occur during non-peak hours traffic and will move directly down Tenth Street to the interstate. In April, the main reactor vessel will be shipped in a special shielded and impact-resistant cask because the level of radiation is higher. This shipment will go directly to the disposal site at Barnwell.

Q: Who is performing the work?
A: Fewer than one dozen U.S. companies are in the specialized business of decommissioning nuclear reactors. Georgia Tech conducted a nationwide pre-qualification and bid process on every aspect of the work, including health and safety, transportation of wastes and emergency procedures. The Georgia Tech staff, as well as the consulting engineering firms, is reviewing the formal procedures. The first step is approval of the procedures by the Technical Safety Review Committee (TSRC), comprised of six faculty members appointed by President Wayne Clough and chaired by Dr. Nari Davidson, associate dean of the College of Engineering. The TSRC is responsible to the NRC for approval of the plan.

Q: How will the work begin?
A: In mid-November the contractor will mobilize and begin moving office trailers, storage trailers and a radiation safety trailer into the fenced area west of the Neely Nuclear Research Center. In December work will begin inside the facility.

Q: Is there any danger of release?
A: The level of risk is negligible because there is no fuel in the reactor. The round building housing the reactor is completely sealed and has been from the very first day of operations. The facility has a very sophisticated system to filter the air and an internal and external monitoring system that would sound an early alarm if any release were detected.

Q: How will the work affect the campus community?
A: The faculty and staff of the Neely Nuclear Research Center, under the direction of Dr. Nolan Hertel, will have oversight responsibility for the project. Dr. Rodney Ice, the Georgia Tech radiation safety officer, will be busier than usual because he is responsible for this project from a radiation health and safety standpoint.

Other members of the campus community will not be affected. The actual decommissioning takes place inside the secured containment building.

See Neely, page 3

Georgia Tech Research Reactor timeline

- 1962 - Construction completed
- 1964 - Began operations
- 1964-95 - The facility is used to train engineers to operate commercial nuclear power plants, and for research in biology, materials and medicine
- November 1995 - Ceased operations
- February 1996 - Because fuel is spent and is highly enriched in uranium 235 isotope, it is removed as a security concern prior to the Olympics
- July 1997 - Tech notifies Nuclear Regulatory Commission (NRC) of plans to permanently cease operations (must submit decommissioning plan within two years)
- July 1998 - Georgia Tech submits decommissioning plan to NRC
- June 1999 - NRC approves decommissioning plan, and process begins
- November 1999 - Decommissioning contractor moves trailers and equipment into fenced area west of the Neely Nuclear Research Center
- December 1999 - Work begins inside facility
- January 2000 - Start shipping waste to Oak Ridge, TN
- July 2000 - Decommissioning operations complete
- January 2001 - Facility is granted release from NRC license and is available for unrestricted use for other Georgia Tech needs.
Tech partners with Zoo Atlanta to help preserve pandas

Amanda Hainsworth
Institute Communications and Public Affairs

The long-awaited arrival of the two giant pandas at Zoo Atlanta provides a unique opportunity to the zoo, aims to improve the success rate of captive panda breeding. The pandas were due to arrive in Atlanta last Friday.

Rebecca Snyder, a doctoral student from the College of Sciences, has been researching the behavioral development of pandas at southwestern China’s Chengdu Zoo and Chengdu Research Base of Giant Panda Breeding for the past two and a half years.

Snyder believes that the tendency of Chinese researchers to remove panda cubs from their mothers before six months of age cuts off the cubs from important maternal interaction and guidance.

"In Chinese zoos, the cubs have usually been weaned by six months of age so that the mother can become pregnant and produce another cub as soon as possible," she said. "In the wild, cubs stay with their mothers for 18 months, sometimes longer."

Snyder sees this mother-cub relationship as the key to the panda's behavioral development and, ultimately, to the likelihood of it breeding successfully.

"The mother-cub relationship is the most important one a panda will have. Possibly because captive pandas are separated so early from their mothers, they don't have the opportunity to learn important social behaviors."

"Even though pandas are solitary as adults, they still need to know how to react to other pandas if they are to mate and then, if female, how to look after a cub," she said.

In remembrance: Guy Morris, GTRI

Guy V. Morris, principal research engineer in the Georgia Tech Research Institute (GTRI), died Oct. 27 of a ruptured aneurysm. He spent the last 15 years of his career helping GTRI enhance its national and international profile in radar research and being a valued mentor and friend, said Ed Reedy, vice president and director of GTRI.

"I have considered the hiring of Guy Morris one of the best moves that Bob Trebits and the rest of our researchers," Trebits said. "Guy was a team player, truly a great man—and a real friend."

Morris joined GTRI's Sensors and Electromagnetic Applications Laboratory (SEAL) in 1984, and had served as chief of the radar systems division since 1994. He also directed the Electronic Counter-Countermeasures (ECCM) Program Office.

Morris earned his bachelor's degree in electrical engineering from Georgia Tech and his master's in the same field from the University of Southern California. He brought to GTRI the research and management experience he gained working in radar and advanced technology for Motorola Inc., Magnavox and Hughes Aircraft Co.

As with many Georgia Tech graduates, Morris' career began with his first co-op job, said SEAL director Bob Trebits. After his first Tech quarter, Morris asked the co-op office to assign him to the highest paying job they had.

"When told that job required an electrical engineering major, Guy excused himself, transferred from ME to EE, went back to the co-op office, and accepted his assignment as an EE co-op student," Trebits said.

Morris' recent research interests included pulsed Doppler radar, electronic counter-countermeasures, side lobe cancellation, moving target indication processing and space-based radar. He authored two editions of the Artech House technical reference book, "Airborne Pulsed Doppler Radar" and published numerous technical reports, symposium and conference papers, and articles for technical publications. Morris held three patents and was named a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), the organization's highest level of membership.

"Sharing what he'd learned was just as important to him as performing research," Trebits said. "Guy continuously strived to instill technology and technique among GTRI's more junior researchers," Trebits said. "Guy's legacy at Georgia Tech will be his insistence on quality and timeliness, and most of all, the knowledge that he instilled in the rest of our researchers."

Contributions in Morris' memory can be made to the Frontier Foundation at Northwest Baptist Church in Aculow, Ga. For further information, contact Melanie Price at GTRI, (770) 526-7915 or melanie.price@gtri.gatech.edu.
Alumni Association hires new executive director

The search for a new vice president and executive director of the Alumni Association recently came to an end with the hiring of Joseph P. Irwin. Irwin, a 1980 Tech graduate in industrial management, comes to the Association after a 19-year career with the JERZEE's Division of Russell Corp., working his way up from Los Angeles sales representative in 1980 to president in 1994. Over the past five years he was responsible for a $25 million budget and a staff of 135.

A participant in the master's program at the University of North Texas, Irwin has continued his education through a variety of programs throughout his career. He also wrote a book, Cathedrals of College Football, with his brother, Mike.

Irwin has been active with the Boy Scouts of America, United Way and Variety International. He and his wife, Becky, have two children: Kevin, 14, and Jennifer, 8. The family lives in Alpharetta.

Irwin replaces longtime Alumni Executive Director John B. Carter Jr. (IE '69), who was named chief operating officer of the Georgia Tech Foundation.

Neely, continued from page 1

Q: How will the decommissioning affect Tech's nuclear engineering program?
A: The nuclear engineering program will continue to focus on preparing students to work in the broad nuclear and power industries. Today's technology allows many of the functions of a reactor to be simulated on computers for training nuclear engineers.

Q: What happens after the work is done?
A: The final step is the NRC's independent radiation survey, which could take up to six months. If everything meets the NRC's standards, they will issue an "unrestricted release" for the reactor, which means the facility poses no health hazard and can be used for other purposes. The Georgia Tech Research Reactor has an observation window that allows groups of visitors to observe the work in progress. Beginning in January, interested groups or students and/or faculty may schedule a time to observe the decommissioning operations. To schedule an appointment, please call Arlene Smith at 894-3600.

If you have questions regarding the decommissioning of the reactor, please e-mail Bill Miller at: william.miller@facilities.gatech.edu.

Members of the Georgia Tech Advisory Board (GTAB) gathered on campus Oct. 29 for their semi-annual meeting, which focused on revamping the Institute's strategic plan. GTAB member John Hunter (second from left) and Vice President for Student Affairs Lee Wilcox (third from left) talk with new GTAB members Michael T. Duke (IE '71), vice president for logistics, Walmart Stores Inc., Bentonville, Ark.; and Alan J. Dabbiere (right), chairman, CEO and president of Manhattan Associates, Atlanta. In addition to Duke and Dabbiere, GTAB welcomed several other new members, including Ed H. Bowman Jr. (MS IM '70), FYI Inc., Dallas; Bert Ellis, IXL Enterprises, Atlanta; Alan J. Lacy (LM '75), Sears, Roebuck & Co., Hoffman Estates, Ill.; Thomas E. Noonan (ME '83), Internet Security Systems, Atlanta; Frank M. Taylor, Ford Automotive Operations, Dearborn, Mich.; and Janet C. Wylie (CC '77), Intellect Inc., Fairfax, Va.

Did you know

Home Park Parking
The Home Park neighborhood is located west of I-75/85, just north of Georgia Tech. There is little off-street parking in the neighborhood, and residents have long complained that non-residents often park in the neighborhood during the day, making it difficult for residents to park and to maneuver along the narrow streets. In response, Mayor Campell recently approved City Ordinance 99-O-1646 Residential Parking, which extends the HP Zone residential parking area. Only residents of the marked streets within the HP Zone may park on the street between 7 a.m. and 7 p.m. Residents must purchase a parking permit sticker or risk getting parking tickets.

The following streets are now resident parking only:
- Atlantic Drive between 10th and 14th streets
- State Street between 10th and 14th streets
- Westshire Place
- Home Park Avenue between State Street and the dead end
- 11th Street between State Street and Westshire Place
- Hunerkopf Street between State Street and Atlantic Drive
- Tumlin Street between 10th Street and Richards Street
- Calhoun Street between State Street and McMillian Street
- Lynch Avenue between Hirsch Street and McMillian Street
- Richards Street between State Street and Hirsch Street
- Hirsch Street between 10th Street and Richards Street
- Center Street between 10th Street and Calhoun Street

For more information, see the Parking FAQ at the Home Park Community Improvement Association web site, http://www.accessatlanta.com/community/groups/homepark/index.html.
Brown Bags/Lectures

Nov. 11
GVU Brown Bag Series: "Resurrecting the Dynabook Vision: Squawk," by Mark Gudisal, College of Computing. Noon - 1 p.m., MERC, Rm. 102. Contact: irishia.stewart@cc.gatech.edu or michelle.graham@mg.t.gatech.edu.

Automation and Mechatronics Seminar Series, Woodroof School of Mechanical Engineering, "Revisit the Liars" by Ye-Hwa Chen, School of Mechanical Engineering. 1:30 - 2:30 p.m., MRDC, Rm. 4211. Contact: Wayne Book, 894-3247.

Cognitive Science Colloquium Series, "Model-Based Creative Abduction," by Lorenzo Magnani, School of Public Policy. Noon - 1:30 p.m., Psychology Building, Rm. 256. Contact: Susan Jackson, susan@cc.gatech.edu or 894-7865.

"Laser Fluorescence Measurements of OH and NO—in the Field and in the Laboratory," by Dave Crosley, SR1 International. 3 - 4 p.m., Student Success Center, Clary Theatre. Contact: Susan Ryan, 894-3893.

Nov. 19
Cognitive Science Brown Bag Series. Speaker: Janet Koelndcr. Noon - 1 p.m., Student Center, Rm. 321. Contact: Susan Jackson, susan@cc.gatech.edu or 894-7865.

"Nitrogen Oxides in the Atmosphere: An Update on Their Role," by Dr. A.R. Ravishankara, NOAA. 3 - 4 p.m., Student Success Center, Clary Theatre. Contact: Susan Ryan, 894-3893.

Faculty Development Program

Nov. 18
"Intellectual Property and Ethical Issues Related to Teaching with Technology," panel discussion with legal and faculty participants. Open to all faculty. 11 a.m. - 1 p.m., Student Services Building, Rm. 117. Lunch will be served. Contact: Donna Llewellyn, 894-2340 or donna.llewellyn@ous.gatech.edu.

Sports

Nov. 12
Women's volleyball, Tech vs. Duke, 7:30 p.m., O'Keeffe Gymnasium. Tickets are $3. For more information, call 894-5447 or see www.ramblingwreck.com.

Nov. 13
Football, Yellow Jackets host Clemson, noon. For more information, call 894-5447 or see www.ramblingwreck.com.

Women's volleyball, Tech vs. Wake Forest, 7:30 p.m., O'Keeffe Gymnasium. Tickets are $3.

Miscellaneous

Nov. 12
Tech Pet Fest, sponsored by the Tech Bookstore and The Pet Files. Learn more about alternative health care, nutrition, clubs, dog training and pet products. Event also features onging agility, frisbee and flyball exhibitions, wildlife information, and pet products and services. 10 a.m. - 2 p.m., CyberCafe deck. Faculty and staff are invited to bring their pets. Contact: Gigi Weinrich, 894-1642 or rhonda.wilson@ks.gatech.edu.

GSLow, fully equipped mobile driver licensing facility of the Georgia Department of Public Safety Division. 10 a.m. - 3:30 p.m., behind the Campus Police Department. Services and fees (cash only): GA driver's license renewals, $15; if organ donor, $8; change of name, $10; new resident licensing, $15; if organ donor, $8; handicapped parking permits, no charge; ID cards, $36; learner's permit, $10; veteran's license, no charge. Contact: Linda Wagner, linda.wagner@police.gatech.edu or 894-9972.

Nov. 16
Lecture and booksigning by Robert Kaplan, author of The Nothing That Is A Natural History of Zero. 4 p.m., Skiles Building. Rm. 249. Contact: 894-1642 or gigli.wenrich@bks.gatech.edu.

Georgia Licenses on Wheels (G.L.O.W.), fully equipped mobile driver licensing facility of the Georgia Department of Public Safety. 10 a.m. - 3:30 p.m., behind the Campus Police Department. Services and fees (cash only): GA driver's license renewals, $15; if organ donor, $8; change of name, $10; new resident licensing, $15; if organ donor, $8; handicapped parking permits, no charge; ID cards, $36; learner's permit, $10; veteran's license, no charge. Contact: Linda Wagner, linda.wagner@police.gatech.edu or 894-9972.

Nov. 18
Georgia Tech Women's Forum. Noon - 1 p.m., Student Center, Rm. 321. Program: "Literacy, The Silent Disability," by Collette Dunlap, executive director of Literacy Volunteers of America-Metropolitan Atlanta. Lunch: Sandwich buffet (with pasta salad, cookies, and tea). $6.55. Brown baggers and all members of the Tech community are welcome. RSVP by Nov. 12 to maude robinson@mir.gatech.edu.

FURNITURE

Townhome, Smyrna. 1st floor: great room/dining space, fireplace, study, 1/2 bath, master. 2 BR, 1 BA upstairs. 2 large rooms on finished lower level. $234,900. Betty Noble, 703-770-7748 or carol.york@gtri.gatech.edu.

1930 Decatur bungalow, totally updated since 1963. 2 BR, 2 BA, 1 car garage. $115,000. Contact Peggy Loeasle, 770-804-4765 or pam.rountree@marc.gatech.edu.

Furniture

Cherry wall unit for computer, $300; light oak corner TV stand, $300; brass/glass etagere, $50. Contact: John 770-760-7748.

Cigar box guitar. $50. Call 523-8067.

1996 Saab 900 SE, 3-dr, red with black interior, low miles, $12,500. Contact 770-535-5843 (w), 770-535-7340 (h) or greg.holland@edi.gatech.edu.

For sale: Condo in historic 1920s brick building, 2 miles from Tech. Completely renovated, 2800/BA, hardwood floors, high ceilings. Contact camille.chapman@otnrg.gatech.edu.

Large home in midtown has 2 areas for rent: 1) Furnished BR, BA, kit., private balcony, $500/mo. (6 mo. rate) or $500/mo. (12 mo. rate), avail. Jan. 2000. 2) Furnished 3rd floor. $600/mo. (6 mo. rate) or $600/mo. (12 mo. rate), avail. May 2000. Contact 894-0250 or howard.deutsch@chemistry.gatech.edu.


For rent: Home in historic Kirkwood, 30 Lakeview Dr. NE, 388/28A, bdrm, off-st parking, a/c, hardwoods, $650, $725/mo. No pets, non-smoker preferred. Call 770-984-9285.

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