

DOE Shuts Brookhaven Lab's HFBR in a Triumph of Politics Over Science

Even before they arrived for work at Brookhaven National Laboratory on New York's Long Island on 16 November, the employees had heard or read the grim news: Energy Secretary Bill Richardson would announce later in the day that the lab's High Flux Beam Reactor (HFBR) would be permanently closed.

Officials at the lab were stunned. Neither Richardson nor anyone else at the Department of Energy (DOE) had informed them of the impending shutdown. On a visit to DOE labs in New Mexico, John Marburger, Brookhaven's director, only learned of Richardson's decision when he returned to his hotel and received an emotional call from an aide. "Everyone was shocked that we got sandbagged," declared Thomas Sheridan, deputy lab director for operations.

Some lab scientists said they felt betrayed, recalling that Richardson's predecessor, Federico Peña, had promised that the reactor's future would be determined by serious investigation and dispassionate evidence—a process that, after all, is the foundation of science.

In retrospect, politics and protests prevailed. In Washington a day before the actual announcement, Richardson, a former Democratic member of Congress, briefed Michael Forbes, who represents a large chunk of Long Island in the House of Representatives. Later that day, Forbes, who abandoned the Republican party early in 1999 and declared himself a Democrat, alerted the news media to Richardson's decision. Ever since questions about the health and environmental risks of the HFBR were first posed in early 1997, Forbes and then Senator Alfonse D'Amato, a New York Republican, opposed the reactor. "I appreciate that the department has embraced my strong opposition to restarting the reactor," Forbes told a reporter for *Newsday*. "This has been a priority issue for me for three years."

The reactor had been on standby status all that time because of the D'Amato-Forbes legislation prohibiting DOE from restarting it until government regulators had ensured its safety.

The 60 MW HFBR, which opened in 1965, is the dominant centerpiece

of the lab's leafy 5300-acre site. Until it was closed for routine maintenance and refueling in December 1996, it enabled scientists to use its neutron beams to probe the atomic structures of almost everything from basic metals to human tissues, and to produce radioactive isotopes for medical and biomedical studies. It had been placed on indefinite standby the following month, after workers discovered that radioactive tritium had leaked from the 68 000-gallon holding pool for spent fuel rods located beneath the HFBR and seeped into groundwater at the site. The environmental staff tested samples from the groundwater monitoring wells, and found a tritium level that was unexpected but not extraordinary. But when other samples were taken a week later, the results were surprisingly high: 44 700 picocuries per liter.

Antinuclear protests

In mid-January 1997, the lab informed DOE along with the Environmental Protection Agency, state and county regulators, local officials, and the news media about the tritium leak. Although federal and state agencies agreed that the level of tritium contamination posed no danger to lab employees and nearby residents, some members of the community on Long Island and beyond raised a ruckus. In response to the protests of environmental activists, D'Amato and Forbes introduced legislation prohibiting DOE from restarting the reactor until an environmental impact statement (EIS) had been completed and federal and state agencies had approved the HFBR's startup.

Meanwhile, DOE was taking actions of its own. In May 1997, the department terminated the management contract of Associated Universities Inc, which had represented the prestigious universities that had originated Brookhaven 50 years earlier (see *PHYSICS TODAY*, May 1997, page 45). A new management organization, Brookhaven Science Associates, formed by Battelle Memorial Institute in partnership with the State University of New York at Stony Brook, took over. In addition to the EIS, other reviews were undertaken. One of the most stringent was com-

pleted last February by the Nuclear Regulatory Commission, which concluded that the operation of the HFBR posed no danger to the health and safety of the public, of workers onsite, and of the environment. A previous review by Duke Engineering & Service Inc uncovered no showstoppers in the design, procedures, or programs of the reactor. In connection with the environmental impact statement, the National Academy of Sciences submitted a letter citing the necessity of restarting the HFBR because of the dearth of neutron-scattering sources in the US.

Though the EIS's findings were nearly complete by last April, Richardson extended the public comment period another 90 days for additional input. During that period, groups such as Fish Unlimited and Standing for Truth About Radiation (STAR) demanded that the reactor be closed and dismantled rather than risk the possibility of cancer and other maladies. Richardson continued to delay the release of the impact statement, though Marburger told Brookhaven employees he was "absolutely" convinced the report would support reopening the reactor.

Richardson meanwhile was hearing other voices. At a visit to financier George Soros's benefit in the Hamptons for international refugees, Richardson was lobbied by Alec Baldwin, the Hollywood actor, and Christie Brinkley, the supermodel, who later, with her husband, architect Peter Cook, spent 45 minutes persuading the DOE secretary that the HFBR was poisoning the nearby population.

Soon after his meetings with the celebrities in October, Richardson told aides that a lack of support in Congress for restarting the HFBR and the necessity of spending tight science funds elsewhere were leading him to close the reactor. In his 16 November statement, Richardson said, "While I don't believe the Brookhaven reactor is a threat to the public or the environment, we need to focus our limited resources on productive research. Extremely valuable research has been done at this reactor in its 30 years of operation, but it would take years and be costly to restart."



BITTER END: Closing the gate on the HFBR at Brookhaven National Laboratory.

Martha Krebs, director of DOE's Office of Science, explained to reporters that the secretary's action "obviates the necessity to complete the EIS process." In a telephone conference with science writers, she asserted that the reactor's shutdown was "a difficult decision for the secretary," who, she said, "engaged in as deliberate a process as possible . . . considered all the scientific, programmatic, and community issues," and consulted with "neutron scientists and others, community leaders, and elected officials" before making up his mind.

According to Krebs, the annual cost of operating the reactor was about \$27 million, while maintaining the HFBR on standby is around \$23 million per year. In response to a reporter's question, Krebs said she could not determine whether it would be more expensive to decontaminate and decommission the reactor than to start it back up and operate it. Brookhaven officials earlier had estimated closing costs at \$178 million.

Environmental activists praised Richardson's decree. "It was a political decision," said Bill Smith of Fish

Unlimited, "but it doesn't matter. The important thing is, it's closed." Scientists mourned the loss. "The cost to the nation's science effectiveness is likely to be far greater" than the cost of restarting the reactor, said Marburger in a statement lamenting the HFBR's "untimely demise."

Richardson "pulled the rug out from under us; we weren't given a fighting chance," said Steven Shapiro, associate chairman of Brookhaven's physics department. "We have a facility with a replacement cost of a billion dollars, and for four or five million more than is already spent each year, we're told we can't get restarted." Shapiro pointed out that 280 researchers used the reactor, including 126 from US universities and 14 from industry.

Robert Birgeneau, dean of science at MIT, called the closing of the HFBR a "terrible event." Neutron scattering "is an important field of research in which America has been slipping, and in which it may now be abysmal." Now, HFBR users will have to fight for time at two other US facilities— Oak Ridge National Laboratory in Tennessee and the National Institute of Standards and Technology in Maryland—or go to France's Institute Laue Langevin. DOE officials hope to relieve the jam-up with upgrades at other US neutron sources and the completion of Oak Ridge's Spallation Neutron Source in 2006.

IRWIN GOODWIN

Washington Ins & Outs

Wolff to Leave as NOAO Head; Oertel Departs AURA

With two and a half years remaining in her third term as director of the National Optical Astronomy Observatories (NOAO), **Sidney Wolff** submitted her resignation, effective on 31 December. To many astronomers, her action seemed premature. A tough, outspoken, and smart administrator, she was the odds-on favorite for a fourth term as NOAO's director in 2002. But her decision to leave was characteristically emphatic. Her memo to the board of the Association of Universities for Research in Astronomy (AURA), released on 19 November, stated her intention to step aside, but also indicated her willingness to continue running NOAO's three national centers until her successor is in place "and can take over my responsibilities."

In her statement, Wolff explained

that her decision was not impulsive. "It is actually a vote of confidence in NOAO and its future," she wrote. "As you should know by now, I never quit when the going is tough! In fact, I have concluded that there is unlikely to be a better time than now to initiate recruitment for the next director." As Wolff sees it, NOAO faces no budget crisis this year, since Congress appropriated nearly as much as President Clinton had requested for the National Science Foundation (NSF) in fiscal 2000, and it seems likely that the agency will provide somewhat more than the inflation rate to operate the centers and to provide the main support of the seven-nation Gemini twin 8-meter telescopes in Hawaii and Chile. She noted that problems that plagued NOAO at this time last year have been resolved—



NOAO

WOLFF: Pragmatic and courageous.