underlying tension," says Robert M. Rosenzweig, president of the Association of American Universities. "Those elements in the government who believe they can enhance security by keeping things from the Russians are still there and still very effective. But the new directive will provide those of us who believe in openness an important argument on our side. It helps us clear the cloudy atmosphere."

—IRWIN GOODWIN

Wisconsin seeks to prolong life of Aladdin light source

Aladdin is dead. Its quietus came formally on 30 September, the end of fiscal 1985, when it was entered on the National Science Foundation's necrologue. Aladdin had been a long time dying, as NSF Director Erich Bloch observed to a small group assembled at the agency on 23 September in Room 523 to discuss the once and future synchrotron light sources for materials research. Bloch explained that NSF has given up any idea of reviving Aladdin, the chronically weak light source at the University of Wisconsin's Synchrotron Radiation Center near Stoughton, after four review panels decided in the past six months that the machine could never live up to its original specifications for an electron current of more than 100 milliamp and a beam energy of at least 750 MeV, without installing an expensive high-energy injector (PHYSICS TODAY, August, page 45).

Even so, said Bloch, NSF made a grave decision not to bury Aladdin if still another panel of specialists, after reviewing the university's proposal to operate the machine at a lower current, found it to be stable, reliable and useful. NSF would raise the ring from the dead, Bloch said. In the event, it would not be Aladdin, though.

Prairie mourning. At Wisconsin, Aladdin is lamented in name only. For most of August and all of September, the machine was shut down while scientists and engineers were making corrections that review panels and accelerator experts had identified as necessary to increase the current and control the beam. That meant, among other things, remounting the storage-ring magnets and other components to the bedrock substrata and making extensive measurements of both floor and beam movements, inserting additional clearing electrodes to prevent the phenomenon known as ion trapping in the electron beam, and installing monochromators on the beam lines.

All has gone very well so far, according to David L. Huber, the center's new director. The machine has accelerated currents of 40 milliamp to an energy of 800 MeV—values considered unthinkable just last January, when it operated at only 2.5 milliamp with energy of 0.75 GeV. Huber credits the ideas and efforts of Ednor Rowe, the Wisconsin physicist who designed the machine, and teams of accelerator experts from Argonne, Lawrence Berkeley and SLAC for restoring life to Aladdin. Huber believes further corrective measures should result in raising currents to 50 milliamp and even higher at 800 MeV. "That's not a promise," he says, "but it is a reasonable expectation." While Aladdin's idiosyncrasies are dealt with, the staff is transferring monochromators from the center's smaller 0.24-GeV storage ring named Tantalus to the larger ring.

It was always the intention to gain experience from building and running Tantalus to design and construct Aladdin. The idea was tantalizing and, in the true meaning of the machine's name, ultimately disappointing. In Greek mythology, Tantalus, the son of Zeus and Pluto, divulged the secrets of the gods to mortals and, in consequence, suffered an agonizing end.

Wisconsin's Tantalus will be dismantled slowly and shut down completely in March 1987, if Huber's scenario is right. By then, Tantalus's eight beam lines will be operating at the larger ring, which then will have 17 lines, running 24 hours a day, 7 days a week, and serving industry and university researchers, as do the National Synchrotron Light Source at Brookhaven and the Stanford Synchrotron Research Laboratory.

Before sending the proposal for the Synchrotron Radiation Center to NSF in mid-October, Huber made sure the name Aladdin did not appear anywhere in the document. "We simply refer to it as the larger ring or the 1-GeV machine," says Huber. Though NSF cut off all funds for Aladdin last June, the agency continues to support Tantalus at $1.5 million per year. "We are confident the 1-GeV machine will have twice the number of Tantalus's beam lines, as well as greater brilliance and significant spectral range," adds Huber. It should continue operating for at least another five years and possibly longer, Huber says.

While the technical troubles of the 1-GeV ring seem to be solved, it still faces difficult problems, including the uncertainty of financial support and the prospect of being superseded by larger machines. Wisconsin's proposal calls for $3.4 million to operate Tantalus and modify the large ring in fiscal 1986, which began on 1 October. NSF, for its part, remains cautious and uncommitted to the larger ring until it receives the results of the proposal review by a peer group.

Birth pangs. Equally troublesome is the agenda for new light sources that was delivered at Bloch's meeting in September by Dean Eastman of the IBM Thomas J. Watson Research Center, cochairman (with Frederick Seitz, former president of Rockefeller University) of last year's study of major facilities for materials research (PHYSICS TODAY, September 1984, page 57). Eastman argued the case for Federal support for the top two priorities in his report: a 6-GeV synchrotron-radiation facility producing hard x rays to study the properties of complex materials and a 1.5-GeV machine for both soft x rays and vacuum ultraviolet. Lawrence Berkeley has been fighting for more than two years to get such a 1.5-GeV machine funded at its Center for Advanced Materials.

At the NSF meeting, Eastman told Alvin W. Trivelpiece, director of the Department of Energy's Office of Energy Research, John McTague, deputy director of the White House Office of Science and Technology Policy, and Bloch that possibly some $50 million per year would be required for five years to build both light sources. Given the dismal outlook for the nation's budget deficits during that period and the persistent expressions of financial restraints in Congress, it's unlikely the machines will be started soon.

—IRWIN GOODWIN

Washington Ins and Outs: Merrell to NSF astronomy post

With President Reagan's nomination of William J. Merrell Jr as assistant director of the National Science Foundation for astronomical, atmospheric, earth and ocean sciences on 13 September, all the top jobs at the agency have now been filled. When he took command in August 1985, NSF Director Erich Bloch promised the National Science Board he would fill four major vacancies by the first anniversary of his Senate confirmation. Merrell was professor of oceanography at Texas A&M University, associate dean of the university's College of Geosciences and principal investigator of the Ocean Drilling Program since 1983. A physicist with a PhD from Texas A&M, Merrell served as a program executive at NSF's Office for the International Decade of Ocean Exploration from 1974 to 1977. □