SCIENCESCOPE

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Doomed? "Sarcophagus" over Chernobyl reactor, where scientists work is on the verge of collapse.

Chernobyl Lab's Destiny Uncertain

A unique research lab inside the destroyed Chernobyl nuclear reactor may have to be abandoned, depending in part on what happens next month at a meeting of Western countries intent on averting another radiation disaster.

The explosion at Chernobyl in April 1986 killed 31 people at the site and spewed radioactive particles now blamed for a reported rise in the incidence of thyroid cancers in children in Belarus. To prevent the escape of more radioactive material, Soviet engineers built a concrete "sarcophagus" over the damaged reactor. Ukrainian scientists set up shop inside to study, among other things, a unique, lethally radioactive mineral formed from molten nuclear fuel.

But the scientists in the sarcophagus now have more than radioactivity to fear. Last July, a consortium of experts hired by the European Commission concluded that the 300,000-ton structure would collapse in a strong earthquake. The collapse would level the lab and spew radioactive dust over a "significant" area around Chernobyl, states a report from the Alliance consortium, led by the French firm Campenon Bernard SGE.

The report recommended that a new concrete shelter be built over the sarcophagus. A high-level nuclear policy panel that advises Ukrainian President Leonid Kuchma backs the plan. A new shelter, says chemist Valery Kukhar, who chairs the panel, would let scientists continue their work in the sarcophagus and could allow Ukraine to clean up the site. But the shelter would cost about $1 billion—a price Ukraine's struggling economy can't afford, Kukhar says. Other scientists have suggested simply filling the sarcophagus with concrete.

Because Western Europe would foot most of the bill, it is expected to decide the fate of the damaged reactor in a meeting of a working group of the G7—an economic alliance of four Western European countries, the United States, Canada, and Japan—in Kiev early in November.

Japan Envisions New Accelerator

Two Japanese institutes are laying plans to boost their country's role in elementary particle physics by building a $700 million, 50-GeV accelerator to produce K mesons, or kaons.

The new facility will be based at KEK, the Institute for High-Energy Physics, in Tsukuba, and run jointly with the University of Tokyo's Institute for Nuclear Science. Columbia University's Shoji Nagamiya, who aired the plan this month at a physics meeting in Santa Fe, New Mexico, says it will be used to study high-energy kaons, pions, and heavy ions. An added feature—and one that raised the cost—is the capability to shoot a stream of neutrinos into a cavern 250 kilometers away at the soon-to-be-completed SuperKamiokande neutrino detector, an experiment expected to help determine whether neutrinos have mass and if so, how much.

Peter D. Barnes, physics director at Los Alamos National Laboratory, says such a facility "has been talked about for a number of years, but other countries were not able to make it happen." Proponents hope to win initial funding in Japan's 1997 budget, which would permit completion of the project by 2002. Plans call for the construction of the accelerator to be a domestic project, but international scientific involvement will be on the agenda at a December workshop in Tokyo.

Britain to Keep Science Committee

The British government's surprise decision this summer to reorganize its top science office is still provoking controversy, as a debate in Parliament last week showed. One question the shake-up had left hanging—whether to abolish Parliament's science and technology committee—now appears to have been settled, with the committee's future safe.

The science and technology committee was set up following the creation of the Office of Science and Technology in 1992 to offer the government advice on science policy. Among its works are a report on human genetics, completed earlier this year, and a review of Britain's research councils, to begin this fall. But its future was in doubt following the sudden shift of the OST from the Cabinet Office to the Department of Trade and Industry (DTI) in July.

Last week, in the first parliamentary debate on science since the shift, many members questioned the wisdom of the reorganization, which critics fear will tie science too closely to industry. But they could at least take comfort that Ian Lang, president of the Board of Trade and the Cabinet minister now responsible for science, said that the government wished to continue the independent parliamentary panel, which Lang said "has tackled a variety of important topics and played a considerable role in drawing [attention to] scientific and technological issues."

John Mulvey, spokesperson for the lobbying group Save British Science, welcomes the decision to keep the committee but stresses the scientific community's continuing worries about the move of OST to DTI. Noting that DTI is to reply soon to the genetics report, which focuses on medical and ethical—not commercial—issues, he says, "It's absurd that the president of the Board of Trade should respond."

Budget Chief Sees Steady State for Basic Research

Basic research should emerge relatively intact from the current budget battle, says Alice Rivlin, director of the Office of Management and Budget, and it has a high priority in next year's presidential budget request.

"We're trying to hold the line [in 1997]," Rivlin told members of the President's Committee of Advisers on Science and Technology (PCAST) this week in a preview of what the Administration is planning for the fiscal year that begins on 1 October 1996. "While other agencies are looking at cuts of 20% or more, we're hoping to maintain current levels [for basic research]. That's the best we can do."

PCAST members wanted more, however, especially for the National Science Foundation (NSF). "I was hoping that she would see the important role that NSF plays in funding basic research as a reason for increasing its budget," said panel member Philip Sharp of the Massachusetts Institute of Technology. Panel members also urged Rivlin to boost energy R&D to reduce U.S. dependence on foreign oil.

As for this year's budget wars, Rivlin predicted that the White House and Congress will reach agreement "sometime between Thanksgiving and Christmas" on individual 1996 spending bills. The key, she said, is moving some or all of the $7 billion that Congress has added to defense into high-priority social programs, a compromise that would allow both sides to keep their promise to hold down government spending.