terway. In Nanjing, a plant producing aniline dumped 9,000 tons of sludge and 20,000 tons contaminated with the poisonous organic chemical into the waterways. *Environmental Protection* also reported that "there was a high frequency of illness among the workers at the plant." In 1978, pollution controls were installed and the situation greatly improved, the report said. Even so, the wastewater contaminated with aniline was only reduced by 60 percent.

To complicate pollution problems, the Chinese government is now encouraging the use of urban sewage in agriculture because of water shortages in the countryside resulting from poor water management and droughts. One city's environmental protection office found trace amounts of cyanide and heavy metals in vegetable crops. The peasants complain that "sweet potatoes from these areas do not soften during cooking, rice . . . has an unusual taste, and eggplants and tomatoes irrigated with sewage . . . are likely to rot," according to a Hebei newspaper.

China has taken some positive steps, some that are symbolic and some that are more substantive, to curb pollution. Minister Li Ximing has given speeches acknowledging the country's environmental problems. He and others in China have stressed conservation as the best immediate solution to control pollution and prevent further ecological damage. He has also said that heavy industry should no longer be allowed to expand in major cities that are popular tourist spots, such as Beijing, Hangzhou, Suzhou, and Guilin, where "industry is already concentrated and environmental quality is poor." According to the government, heavy industry must now include pollution controls in future construction plans. In agriculture, the government has changed its policy so that regions may have more flexibility to choose which crops they may grow. The national campaign to plant more trees continues and the goal for 1985 is to ensure 65 percent survival of the seedlings.

Although the government seems to be saying all the right things in regard to environmental protection, substantial improvements are likely to be long in coming. "We are gradually paying more attention to the environment," says Peng Feifei, second secretary of the Chinese embassy in Washington. "Things are changing a lot." But, according to Smil, the changes will have to be pursued much more aggressively if, in the long run, China wants to meet its economic goals.—**MARJORIE SUN**

NSB Education Commission Produces Grand Design

The National Science Board (NSB) Commission on Precollege Education in Mathematics, Science and Technology has delivered an ambitious plan of action designed to achieve world leadership in science and math education for the United States by 1995. Federal initiatives in the plan would require appropriation of some $1.5 billion in the first year. The Reagan Administration has insisted that new federal funding for education be limited to a fraction of that sum (*Science* 11 March, p. 1198).

NSB, the policy-making body of the National Science Foundation (NSF) formed the commission in mid-1982 at a time when the precollege education program of the foundation was facing extinction at the hands of Administration budget makers. The impression at the time was that the commission was expected to pick up the pieces and advise NSF on how to rebuild a viable precollege program in science and math education, but the report has a focus vastly broader.

The report's recommendation, which is likely to be most controversial, calls on the federal government to help finance 1000 "exemplary" elementary schools and the same number of secondary schools across the United States. A federal contribution of $276 million a year for three years is projected. The report also recommends a retraining program for teachers of math and science who are not fully qualified for the job, at a cost of $349 million a year for 5 years.

In the policy realm, the report asks that the President appoint a National Education Council, which would report directly to him, to recommend national educational goals and to monitor progress toward them. Establishment of governors' councils to perform a similar function at the state level is also urged.

Among additional recommendations was that more time in the school day be devoted to math, science and technology. The commission suggests that through the sixth grade 60 minutes a day be spent on mathematics and 30 minutes on science. In grades 7 and 8 math, science, and technology should each be taught for a full year. High school requirements should be raised, so that all students take at least 3 years of math and 3 years of science and technology, including a semester of computer science. Requirements for college admissions should be raised to 4 years each of high school math and science.

The 20-member commission launched a wide-ranging study 17 months ago. Its cochairmen were William T. Coleman, Jr., former Transportation Secretary in the Ford Administration and, Cecily Cannan Selby, former dean of academic affairs and chairman of the board of North Carolina School of Science and Mathematics.—**JOHN WALSH**

Technology Export Law Reform Facing Difficulties

A move to ease the export of U.S. technology, framed as part of the reauthorization of the Export Administration Act which expires on 30 September, now is expected to face stiffer opposition on Capitol Hill because of the Korean plane incident.

The bill, H.R. 3646, sponsored by Representative Don Bonker (D–Wash.), seeks to simplify and redefine federal policy governing the export of U.S. goods, including technologically sophisticated items and the know-how needed to run them. The bill is intended to limit the President's authority to restrict such exports as President Reagan did when he blocked the export of U.S. technology for the European–Soviet pipeline. The bill would prohibit such actions, except during emergencies, without approval by Congress.

Other provisions of the bill would streamline the export of technology to allies. Currently, certain exports may be subject to review at several levels—a process that is inefficient and "a serious irritant to U.S. allies and an obstacle to consensus" among them, according to a report by the House Committee on Foreign Affairs.

The reform bill also emphasizes the need to sustain "vigorous scientific enterprise by protecting the ability of scientists and scholars to communicate their research findings." It also states that the United States must preserve its reputation as an exporter by controlling hazardous goods and

other potentially noxious exports.

Some of these reforms faced stiff opposition from the Reagan Administration before the Korean plane was downed. Now observers on Capitol Hill fear that Congress will reconvene in such a martial mood that the momentum that had been building in the House for export reform will be gone. Thus, the more conservative Senate version of this bill may be more likely to win approval.—**JEFFREY L. FOX**

Britain Joins European Nations on Fast Breeder

Paris. Britain's secretary of energy, Peter Walker, announced last week that Britain has decided to join other Western European nations—rather than the United States—as its principal international partner for future research and development into fast breeder nuclear reactors.

Last November, faced with rising costs and declining predictions of future electricity demands, the British government announced that it was cutting back the scope of its fast breeder program and reassessing its future (*Science*, 10 December 1982, p. 1094). A report subsequently prepared by John Harsh, the chairman of the United Kingdom Atomic Energy Authority, that was submitted to the department of energy suggested that costs should be reduced by increasing international cooperation; it suggested either the United States or other European nations as collaborators.

In last week's statement, Walker said that the British government had decided to open formal negotiations with the existing fast breeder consortium formed by France, West Germany, Italy, Belgium, and the Netherlands. According to Walker, "by working with our European partners we can reduce our costs by cutting out duplication, and share our considerable collective technical expertise."

Three years ago, Britain's fast breeder research community, which was responsible for the world's first commercial breeder reactor at Dounreay in the north of Scotland, began to explore possible collaboration with France, whose 1200-megawatt Super-Phénix is due to start operating in late 1984 or early 1985. At the time, however, the entry fee demanded by the French—rumored to be between $75 million and $110 million—was considered unacceptably high, and the deal fell through.

This time, although the details of the new collaboration are yet to be finalized, it is not expected that any money will change hands. France, in particular, is facing much higher cost estimates than originally expected for the construction of a planned 1500-megawatt successor to Super-Phénix, and is more enthusiastic than previously about making this a truly international project, with each country contributing its scientific, technical, and engineering expertise.

Still being discussed, however, is where a new fast reactor, with Britain, France, and Germany as the principal supporters, would be built. The French proposal is that this should be next to Super-Phénix on the river Rhône but this is unlikely to prove immediately acceptable to Britain; conversely, suggestions that the new reactor be based on the coast of Suffolk, in the east of England, have been dismissed as "premature" by the Central Electricity Generating Board, which would have responsibility for constructing and operating it.

Critics of Europe's fast breeder program, who argue that the changing patterns of future energy demands make breeders unnecessary, claim that the new eagerness for a formal international agreement is an attempt to secure the future of the program by making it impossible to cancel unilaterally. "What we fear is that it could turn into another Concorde," says Walter Patterson of Britain's Friends of the Earth.

The British government maintains that the decision to collaborate with the French, agreed in principle at a meeting between British Prime Minister Margaret Thatcher and French President François Mitterand earlier this year, is essentially pragmatic. And in his statement, secretary of energy Walker insisted that, although the choice of working with European partners "reflects our similarities of purpose and equivalent levels of expertise," Britain intended to keep open the possibility of extending international collaboration outside Europe—particularly with the United States and Japan—"when the time is right."—**DAVID DICKSON**

FDA Speeds Approval of Cyclosporin

On 2 September, the Food and Drug Administration (FDA) approved cyclosporin, a new drug that suppresses the immune system. The drug has been used on an experimental basis in this country for the past 4 years as a means to prevent the rejection of transplanted organs. It is also being tested as a treatment for certain autoimmune diseases, such as multiple sclerosis. Because cyclosporin shows great promise as an immunosuppressant, the FDA evaluated it on an expedited basis, approving it in 9 months rather than the 2 years that would normally be expected.

Cyclosporin is produced by Sandoz, which plans to market the drug under the trade name Sandimmune. A maintenance dose of the drug, which recipients of organ transplants probably will have to take for the rest of their lives, is expected to cost $4000 a year. Sandoz predicts, however, that the cost will drop as they begin to make more of it and that the current maintenance dose will be lowered as physicians become more familiar with the drug.

The advent of cyclosporin may bring with it some problems. Major health insurers are concerned that, with cyclosporin, heart, lung, and liver transplants may become successful enough to qualify for reimbursement, which raises the question of whether the nation should commit its resources to paying for such expensive procedures. A liver transplant can easily cost $100,000.

But it is not yet clear whether cyclosporin will end up costing or saving the nation money. Heart and liver transplant patients cannot survive without a transplanted organ. Kidney transplant patients, however, can live without transplants by means of dialysis, which costs the federal government more than $20,000 a year for each patient. Cyclosporin has increased the success rate for kidney transplants to 90 percent.

Sandoz also worries that patients with serious and untreatable autoimmune diseases will rush to take cyclosporin before the drug can be evaluated to see if it can help these patients.—**GINA KOLATA**