ITALY

Reform Begins With New CNR Head

VENICE—Last week, Italy's science minister, Luigi Berlinguer, appointed a relatively unknown academic, informatics engineer Lucio Bianco, to head the National Research Council (CNR). Bianco has worked for the CNR—the government's chief research-funding agency—for 25 years and is currently director of the council's Institute of Systems Analysis and Informatics in Rome and a lecturer in operational research at the University of Rome "Tor Vergata."

New powers. Science Minister Luigi Berlinguer.

Such an appointment would not normally excite much comment outside the scientific community, but it prompted strong reaction in national newspapers. The reason? Just days earlier, Parliament approved a law that gives Berlinguer more authority and requires his ministry for universities and research (MURST) to draw up within 1 year legislation to reform the scientific infrastructure. Berlinguer told *Science* his first target for reform is the CNR, and Bianco's appointment is part of his master plan.

Berlinguer says that he has radical plans for the CNR, which has 350 institutes scattered around the country, including groups within the universities. "A large part of CNR research is done in the universities ... but we want CNR to have a different mission," he says. Berlinguer says he wants the council to reduce its role in university-based research and concentrate on its own institutes, establishing a more coordinated network of centers and putting more emphasis on targeted projects, or *progetti finalizzati*, involving CNR institutes, universities, and industry. CNR has already been moving in this direction, but Berlinguer wants it to go further: "CNR should not be carrying out basic research, but applied," he says. In this context, he considers Bianco "perfect, since he has long experience in applied research."

Most researchers agree that CNR is ripe for reform. The work of the council's scattered institutes is said to be poorly coordinated; its funding policies have frequently been criticized for spreading funds too thinly; and the 15 national committees, each covering a field such as mathematics or chemistry, are seen as too isolated from each other. "The committees will be one of the big issues [of the reforms]," says Glauco Tocchini-Valentini, director of the CNR Cell Biology Institute in Rome. Also troubling for many researchers is CNR's dual role as administrator of its own institutes and a dispenser of grants to both its own centers and the universities. "Some people think these two activities should be split, leaving CNR just operating its own research centers," says Tocchini-Valentini.

Researchers have mixed feelings about Berlinguer's planned reforms, however. Lucio Doretti, director of the CNR Research Area in Padua, sees the shift toward applied research as a positive move, "since it could be a means of obtaining more funding [from industry]." The director of one CNR physics institute in Rome, who asked not to be named, is not so enthusiastic, saying that "CNR does a lot of good basic research."

Berlinguer's choice of Bianco has also drawn some political flak. Bianco's brother is chair of one of the political parties of the leftist majority, the Popular Party, and the appointment was condemned as a political move by the national daily *La Repubblica*. "Today is a black day for Italian research," added Fiorello Cortiana, head of the Italian Senate's education and research committee.

Next on the list of Berlinguer's reforms in the coming year is the ENEA, which supports research in a broad range of fields linked largely to its past as a nuclear agency. Accused by past governments of being inefficient, the agency is suffering something of an identity crisis because it is answerable to MURST and the ministries for industry and the environment. "We don't know who our boss is," complains a senior ENEA official. Berlinguer says he has no clear view as yet of ENEA's future.

Although Berlinguer has only a year to work out his reforms—most likely against stiff opposition—Italy's science minister appears buoyant. "It is a very short time scale," he says, "[but] the point is, we have the power to do it."

–Susan Biggin

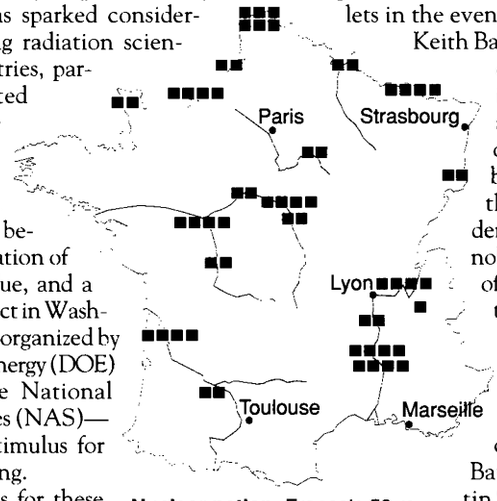
Susan Biggin is a science writer in Venice.

RADIATION PROTECTION

France Distributes Iodine Near Reactors

PARIS—Last week, French Health Minister Hervé Gaymard announced that local authorities will begin distributing potassium iodide (KI) tablets to approximately 600,000 people living within 10 kilometers of 24 nuclear installations, including France's 20 nuclear power facilities. In the event of a nuclear accident, the residents would take the tablets to saturate their thyroid glands with a stable isotope of iodine and thereby block the uptake of radioactive iodine isotopes, byproducts of nuclear fission that could cause thyroid cancer.

The decision in France—where 77% of the nation's electricity is generated by nuclear power—has sparked considerable interest among radiation scientists in other countries, particularly the United States, where stable iodine is not generally made available to the public. Some U.S. experts believe that a reevaluation of this policy is overdue, and a meeting on the subject in Washington on 7 April—organized by the Department of Energy (DOE) and hosted by the National Academy of Sciences (NAS)—may provide the stimulus for just such a rethinking.



Nuclear nation. France's 59 reactors at 20 sites make it highly reliant on nuclear power.

A major impetus for these developments has been the alarmingly high number of thyroid cancer cases among children who were living near the Chernobyl nuclear power plant at the time of the 26 April 1986 accident. Radiation scientists believe these cases are due primarily to exposure to radioactive iodine (*Science*, 19 April 1996, p. 357), and the fact that the cancer toll is many times higher than had been predicted has led many experts to conclude that children's thyroids are much more sensitive to radiation than was previously realized. As a result, the World Health Organization (WHO) has already recommended that all schoolchildren in Europe have immediate access to KI tablets in the event of an accident.

Keith Baverstock, a WHO radiation scientist based in Rome, says the agency made its recommendation after it became clear that the thyroid cancer epidemic caused by Chernobyl extends hundreds of kilometers from the plant. "No child could be so far away from a nuclear facility that they would not need access to these tablets," Baverstock says. Martin Schlumberger, a thyroid cancer expert at the Gustave-Roussy In-

stitute near Paris, agrees: "It is clear that the risk does not stop at 10 kilometers." Indeed, in discussions with *Science*, many radiation and thyroid experts felt that efforts to protect children should go further than those proposed for France, but they were far from unanimous over how far to extend that protection or the best way to provide it.

Baverstock and others question, for example, whether stable iodine should be given to adults after a nuclear accident, which would occur under the French program. "Over about age 45, taking potassium iodide could trigger thyroid dysfunction in people who already have thyroid abnormalities," says endocrinologist Aldo Pinchera of the University of Pisa in Italy. Moreover, as yet, there is no evidence that adult thyroid cancer rates have risen after Chernobyl. "But for young people, the advantages are much greater than the risks," Pinchera says.

Much of the recent enthusiasm among experts for making KI tablets widely available results from studies in Poland, where government authorities ordered stable iodine to be given to all children 16 years and younger after the Chernobyl accident. About 10.5 million children and 7 million adults received a single KI dose—the largest stable iodine protection program ever carried out. Although the tablets were not given out until 3 days after the accident, a follow-up study showed that the thyroids of children and adults who took the pills still absorbed only 60% of the radioactive iodine of those who did not, with very few adverse side effects. And earlier, smaller scale experiments have indicated that if stable iodine is given soon enough, it can be up to 100% effective.

Despite these encouraging results, some experts warn that if KI is put directly into the hands of the population, as is planned in France, people might lose the pills or use them incorrectly. "It worked so well in Poland because it was a dictatorship," says Jan Wolff, a thyroid expert at the U.S. National Institutes of Health in Bethesda, Maryland. In contrast to the French program, for example, the United Kingdom has chosen to stock tablets in schools, police stations, and other locations near nuclear power plants rather than give them directly to the public. Yet, even this policy goes far beyond current practice in the United States, which has about 100 commercial nuclear power plants. With only one or two exceptions, stable iodine is not made available to people living near a nuclear installation. "We prefer to go with protective actions such as evacuation or sheltering," says William Dornsife, director of Pennsylvania's Bureau of Radiation Protection and chair of the Conference of Radiation Control Program Directors. Dornsife says that these measures are "probably as effective as KI, because it takes several hours before KI becomes effective."

But other experts are not convinced. "Imagine evacuating New York City if one of those Hudson River nuclear plants goes," says Wolff. "That would probably kill more people than any accident would." And Evan Douple, a member of the radiation-effects research board of the National Research Council—the research arm of the NAS—says that the NAS is very interested in taking a second look at U.S. policy: "We feel there is some room for reassessing this question." Indeed, Douple adds, although the 7 April meeting in Washington—which will be attended by representatives of several government agencies—was originally convened to discuss whether DOE should distribute KI tablets to workers at its own nuclear facilities, "I am hoping that the meeting will also stimulate interest in getting this issue on the table" on a nationwide basis.

In the meantime, radiation experts on both sides of the Atlantic will be monitoring the French program closely. "From a scientific point of view," says Schlumberger, "all the people should be protected. But whether it is possible logistically is another question."

–Michael Balter

UKRAINE

Tax Law Halts Western Grant Payments

The old adage about the inevitability of death and taxes has taken on a new meaning in Ukraine: A new tax law could spell death for dozens of scientific projects. Several Western organizations have suspended grant payments to members of this country's scientific elite, citing a law that apparently will siphon 20% from each grant. The law could undermine vital support for Ukrainian labs doing world-class science.

Although Ukraine employs 90,000 research staff, most scientists spend little time at the lab bench, instead working at second jobs to supplement sporadic paychecks. Top scientists have avoided this fate largely thanks to Western grants. But the new tax law, issued as a presidential decree last fall, has thrown in limbo at least $20 million in grants to Ukrainian researchers. The situation could harbinger a bigger problem in neighboring Russia, the revised tax code of which could put tens of millions of dollars in grants in jeopardy (*Science*, 7 March, p. 1411).

Five years ago, the United States and Ukraine signed a bilateral agreement that exempts U.S. aid programs from taxes and duties. The first science program to benefit was the International Science Foundation (ISF), which spent more than $100 million on peer-reviewed science in the former Soviet Union. ISF recently wound up its research grant program, and its final tax-free checks in Ukraine were paid out last month.

But other Western agencies may no longer enjoy such exemptions, prompting a preemptive boycott. First to pull the plug was the U.S. Civilian Research and Development Foundation (CRDF), which has postponed initial payments on $2.3 million worth of applied-science projects. CRDF's plight has caught the eye of the U.S. State Department: In a 22 January letter, the department's Richard Morningstar, co-chair of a U.S.–Ukrainian economic committee, warned Ukrainian Deputy Prime Minister Viktor Pynzenyk that the tax policy "could put U.S. assistance funding at risk." In addition, Morningstar wrote, the tax changes, if implemented, would be "a serious obstacle to U.S.–Ukrainian scientific cooperation."

CRDF is not the only program imperiled. The Howard Hughes Medical Institute began paying out 5-year, $150,000 grants to three Ukrainian biomedical scientists in late 1995, as part of its new Eastern Europe program. But the institute has postponed the Ukrainians' first quarterly payments of 1997, before taxes could be levied. "If the standstill continues, the situation may become critical," says Kiev biophysicist Oleg Krishtal, a Hughes grantee. The European Union's INTAS program, too, has temporarily halted payments on 64 projects in Ukraine.

Also worrisome to the West is Ukraine's sales tax on research equipment and supplies. The International Science and Technology Center (ISTC) in Ukraine, a program funded by four countries that supports 1650 Ukrainian scientists with $10.4 million in grants—also now suspended—won an exemption to value-added tax (VAT) on research-related purchases in October 1993. But since ISTC-Ukraine began its operations in late 1995, it has had to pay VAT and has not yet been reimbursed by the Ukrainian government. According to Morningstar, "This problem needs to be resolved at an early date so continued U.S. government contributions to [ISTC-Ukraine] are not put at risk."

The Ukrainian government has not been forthcoming in responding to the agencies' pleas. However, in a letter to CRDF on 4 March, the new Ukrainian science minister, Volodymyr Semynozhenko, suggested the tax problem might be "resolved" by mid-April. If it is not cleared up soon, Ukraine's scientific elite could face the same plight as their less fortunate colleagues: hawking cigarettes or chauffeuring tourists instead of doing research.

–Richard Stone