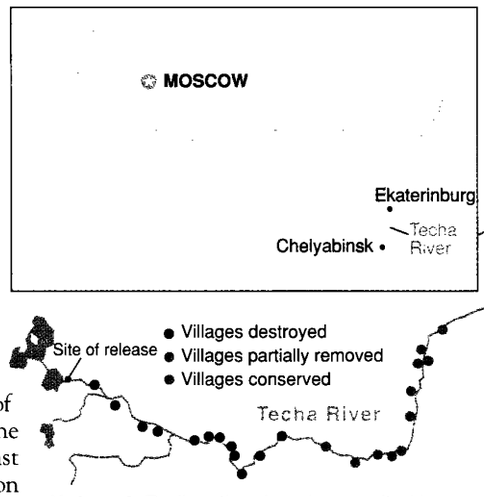
term analysis of the effects of radiation on Mayak's workers and on the general population around Ozyorsk. The opportunity is "too valuable" to pass up, O'Toole told *Science*. The immediate goal, she says, is to explore what has been a closed chapter in the history of the 20th century and provide "a conclusive, open record" of the events. Already, to protect the raw data, DOE has agreed to pay for the microfilming of medical records, now stored on paper in tinder-dry wooden buildings. For the Russians, one immediate objective, according to Lubov Annissimova, an adviser to the Russian emergency relief ministry, will be to reconstruct radiation exposures of citizens around Ozyorsk and at other locations. The Russian government may compensate citizens for injuries, and it will need good dose estimates, she said.

Many scientists associated with the project hope this research will yield data that could never be obtained any other way. Nuclear safety expert Oleg Pavlovski of the Russian Academy of Sciences said the project's planning committee agreed last week that the top priority will be to focus on people who lived along the Techa River. The situation there almost resembles a planned experiment. People at the upstream end of the river received intense external radiation doses, while those downstream received prolonged, low-level, internal doses. Because the population is homogeneous, epidemiologists are confident that they can obtain good comparative exposure data. In addition, the U.S. and Russian scientists want to learn more about the effects of plutonium exposure, common among Mayak's workers but extremely rare in the West.

Radiation health experts hope the Russian data will provide new insights into low-dose radiation effects. Present risk estimates are based on studies of bombing survivors in Hiroshima and Nagasaki. While the Japanese data are excellent, they don't represent peacetime hazards very well. The bombing victims were exposed to short, intense bursts of radiation, while today's safety planners are more concerned about low-level exposures lasting for many years—the kind people at Ozyorsk experienced.



Hot spot. Radioactive dumping resulted in prolonged exposure to people along the Techa.

For the general population, "the primary radionuclide of concern is strontium-90," said Mira Kossenko, of the Urals Research Center for Radiation Medicine. She helped create a registry that includes 30,000 individuals, death certificates on more than 11,000, and data on 774 fatal cancers. She said that 80% of the death reports had been confirmed by autopsies, but that diagnoses of leukemia and other cancers need further confirmation. Dan Hoffman, Kossenko's co-investigator and chair of epidemiology at George Washington University in Washington, D.C., says that the registry is potentially as valuable as the Hiroshima-Nagasaki data, adding, "The key word is 'potentially.' "

DOE consultant Marvin Goldman of the University of California, Davis, says the Russian data analyzed so far suggest that a specific dose, if delivered over a long period, is less likely to induce cancer than is the same dose delivered in a burst. If the Russian data support this observation, they could translate into lower risk estimates for long-term, low-level exposure and reduced concern about environmental hazards. But, as Goldman notes, the Russian data must be validated before anyone can seriously begin to rework the radiation risks. Goldman and his colleagues are eager to start digging into this grim legacy of the Cold War.

–Eliot Marshall

FRANCE

Transgenic Corn Ban Sparks a Furor

PARIS—One of France's leading geneticists has quit as president of the nation's Biomolecular Engineering Commission (CGB), which regulates the use of genetically altered organisms, following a government decision to prohibit cultivation of transgenic corn in France. Axel Kahn, who is also director of the biomedical research agency INSERM's molecular genetics and pathology unit in Paris, stepped down on 13 February, one day after French Prime Minister Alain Juppé announced the ban.

Kahn says he had no choice but to resign in the face of the government's "incoherent" decision. Juppé's action came 1 week after the government had approved transgenic corn for consumption by humans and animals, and 2 months after the European Commission—the European Union's executive body—gave the green light to its sale in Europe, largely at the insistence of France. Now, the government is saying it is OK to eat, but not grow, the crop in France. The French government had even asked Kahn to argue for the safety of transgenic corn at the commission. "I no longer have any credibility with my colleagues in Brussels," he says.

According to Kahn, its "environmental risk is equal to zero." But during debates over European approval in Brussels last year, some scientists were not so categorical. While it was generally agreed that the corn is safe to eat, concerns were raised that during cultivation, modified genes might spread to other plants or organisms. The modified corn contains a gene from the bacterium *Bacillus thuringiensis*, which codes for a protein toxic to the European corn borer, an insect that ravages corn crops. It also includes a gene that confers resistance to certain herbicides, as well as a gene for resistance to the antibiotic ampicillin, which acts as a genetic marker. Some scientists believe that the ampicillin-resistance gene could be taken up by infectious bacteria, thus eliminating the effectiveness of the antibiotic.

Jean-Paul Aubert, former chief of the Pasteur Institute's cellular physiology unit—and also a member of the CGB—says that although the likelihood of such a gene transfer is "vanishingly small," it is now possible to create transgenic plants that do not carry the gene. "It would be better to abstain from putting this gene in the plant, because the corn is distributed en masse in humans and animals," Aubert says.

Such concerns, also expressed by ecologists and consumer groups in France and Europe, appear to be behind the French government's decision. A spokesperson for Juppé declined to comment on the controversy, but environment minister Corinne Lepage—who had earlier argued for putting transgenic corn on the market at Europe's Council of Ministers—applauded the decision last week, saying that she had asked Juppé for the ban after becoming concerned that the modified genes "are susceptible to dissemination ... in the environment."

So, for the time being at least, in France—itself a major corn producer—consumers will be eating transgenic corn imported from the United States and Canada.

–Michael Balter