

resulted — as evidenced recently in the area of environmental monitoring at the Three Mile Island nuclear plant. The report recommends creation of a committee representing affected agencies, and perhaps the public, to coordinate action and set standards. It suggests placing an agency with primary enforcement responsibility — perhaps the Environmental Protection Agency — at its head. This report, part of a series, was drawn up at President Jimmy Carter's behest last year.

Recently declassified documents, made public at congressional hearings last week, demonstrate just the sort of conflict-of-interest that the interagency task force seeks to rout out. Under the joint aegis of Edward Kennedy's (D-Mass.) Senate subcommittee on Health and Robert Eckhardt's (D-Tex.) House subcommittee on oversight and investigations, researchers have waded through files of the AEC and Department of Health, Education and Welfare. Records show that during the 1950s, studies about health hazards from bomb fallout and the concerns of some AEC officials were ignored by AEC commissioners for fear that any adverse publicity their attention might bring could slow the U.S. weapons-testing program or even close the Nevada test site.

Under President Eisenhower's advice, the agency was told to "keep [the public] confused about 'fission' and 'fusion'" to defuse local concern about whether the unexplained deaths of livestock might be due to fallout. What's more, a press release issued by the AEC about the death of sheep in Utah falsely claimed that the Public Health Service concurred with AEC officials that fallout could not be blamed, according to testimony and records furnished by HEW's general counsel, F. Peter Libassi and by Donald Frederickson, NIH's director.

One nuclear test dumped fallout on St. George, Utah, exposing residents to 6,000 millirems. Although the AEC's own permissible-exposure limit for a 13-week period at that time was 3,900 mR, it repeatedly assured residents that exposure levels they received were too low to be harmful. Recent tests now indicate the incidence of leukemia among children growing up there during the 1950s was twice that for children born earlier or later. Memos documenting similar examples fill the files. Not coincidentally, more than 500 lawsuits have been filed against DOE by cancer victims or their heirs asking compensation for fallout-related cancer.

And the Washington Post reported last week that it had obtained agency documents showing that the AEC deliberately discredited a study by Edward S. Weiss in 1965 that had showed a fallout-leukemia link after meeting with the White House and Public Health Service to discuss the government's potential liability. The article, which had been submitted for publication, was withdrawn and never published, the Post says. □

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## International views on quake prediction

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It's a tricky problem, earthquake prediction; tricky from two standpoints — scientific and public policy. So, when more than 200 delegates from 42 countries attended the recent International Symposium on Earthquake Prediction in Paris, it was more than a scientific kaffeeklatsch. Sponsored by the United Nations Educational, Scientific and Cultural Organization, it gave many earthquake-susceptible but less scientifically developed countries a chance to hear the big four in prediction — the United States, China, USSR and Japan — but about research results and policy plans.

What emerged scientifically, according to attendee Robert Wesson, chief of the U.S. Geological Survey's Office of Earthquake Studies, is that earthquake prediction is becoming "more systematic and broadscale." For example, as C.B. Raleigh of the Survey's Menlo Park office pointed out, in 1974 the Chinese program was almost entirely empirical and depended on isolated observations of anomalous events. Since then, Raleigh said in an interview, the Chinese have begun to develop and use laboratory models for earthquakes. In addition, about 10,000 people monitor a systematic array of instruments and sites for geodetic measurements as well as for changes in well-water levels, radon concentrations, electrical resistivity and animal behavior. The Paris meeting was the first opportunity to see some of the results, such as an analysis of very long term precursors to the disastrous Tangshan Quake of July 28, 1976 (SN: 8/7/76, p. 87). Raleigh said the Chinese delegation reported a steep, uniform drop in well-water levels two to three months before the quake, a decrease in electrical resistivity one and a half years before (it had been constant for four years), an increase in the vertical component of the magnetic field six months before and a strange, one-and-a-half-year-long local change in gravity without an associated elevation change.

The move to a methodic, broadscale attack is also apparent in other countries. Japan reported that it has developed a commercially available, continuously measuring radon monitor, which it has used for four years in a network that blankets the active Tokai district and Izu Peninsula. Through cooperative programs, the USSR is beginning to pick up the U.S. emphasis on finding an underlying hypothesis for earthquakes. And the United States is picking up the Russian approach of simply collecting data. "One message we get [based on successful Soviet predictions]," said Wesson, "is that we don't pay enough attention to water levels. We will pay more attention in the future."

While their research may differ only in

detail, the countries' public policies toward making predictions vary as much as, and mostly because of, their cultures. Wesson pointed out that the United States is the most open about the problems of issuing a public prediction. In the United States, he said, a prediction would be made public early on and would be revised continually. Local officials would take action based on that information. The Soviets, however, feel no need to keep the citizenry up to date and, unlike the United States, both the Soviets and Chinese can issue evacuation orders without challenge.

The differences are clear in the administrative structures. Japan, which must be ready to move its millions quickly in the event of the great Tokai quake, has a coordinating committee on earthquake prediction that constantly evaluates data from various networks. China uses provincial seismological brigades that concentrate on local events. Only "if they think something big is coming," says Raleigh, do they involve the state seismological bureau in Peking. In the United States, Wesson told the meeting, California and the federal government have each established a council whose roles will be to evaluate predictions made by scientists and to communicate information. □

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## Carter urges scientists' support

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In an address to the 116th annual meeting of the National Academy of Sciences last week, President Jimmy Carter called on scientists to help pass his proposed oil windfall profits tax and urged them to take part in the debate over nuclear arms control.

Reminding scientists that part of his proposed tax on the oil industry would go to research on alternate energy sources, Carter charged that opponents of the tax are trying to "hoodwink" the public, to "plow under" those research dollars and "kick back" revenues to the oil industry. He called on scientists to support the tax and to create new energy technologies.

In asking their support of the current arms control debate, Carter said the public will look to science for knowledge about the debate. "If science gave us nuclear weapons, it is no less true that science has given us the extraordinary means of verifying compliance with treaties to control those weapons," he said.

Carter also called on U.S. scientists to promote international research projects and to push for Senate approval of an Institute for Scientific and Technological Cooperation, which will give advice to developing countries. Emphasizing that he has asked for a 25 percent increase in funding for basic research, Carter urged scientific innovation to improve the competitive position of American industry. □