

Sulfur pollution can aid crops

J. C. Noggle would never suggest reducing air-pollution-control requirements for fossil-fueled powerplants. But as a result of the soil chemist's research at the Tennessee Valley Authority's National Fertilizer Development Center in Muscle Shoals, Ala., it appears some farmers may unwittingly benefit from the sulfur emissions of local polluters.

When U.S. farmers first began turning to chemical fertilizers to replenish nitrogen, phosphorous and potassium in their fields, they unknowingly reaped a dividend—sulfur. It was a byproduct of the fertilizer-manufacturing process.

What eventually bothered Noggle, however, was why elimination of sulfur in fertilizer and declining use of manure didn't trigger a sulfur deficiency in crops. He speculated that the proliferation of fossil-fueled powerplants might be the answer. His research now shows that in regions near powerplants, 10 to 20 kilos of sulfur annually can rain down on each hectare of soil—well within the range required by crops.

Sulfur dioxide, the form emitted by powerplants, can harm crops; but in time SO_2 will take on additional oxygen. If that sulfate is added to crops through particle deposition or mild acid rain, it can replenish natural soil-sulfur losses. Although there's no real problem now, Noggle says, as powerplants reduce their emissions—particularly where soils are sandy—farmers will have to compensate with supplements. He says replacing half the sulfur now coming to soils in the 10 TVA states from powerplant stacks could cost farmers \$6 million a year.

Three Mile Island dose estimates

A preliminary update of the radiation to which persons living within a 50-mile radius of the Three Mile Island nuclear-power plant were exposed appears in a 104-page report by an ad hoc panel representing the Nuclear Regulatory Commission, the Environmental Protection Agency and the Department of Health, Education and Welfare.

Using different analytical techniques, the authors give four estimates of the total dose to the study area: 1,600, 2,800, 3,300 and 5,300 person-rem. (Rem is an absorbed dose of any radiation equal in biological effect to one rad of therapeutic X-rays. Person-rem is a term that accounts for varying exposures among a population at risk.) Using the average value—3,300—the report projects an average cumulative dose to persons within the 50-mile radius of 1.5 millirem and a maximum dose to anyone off the powerplant site at less than 100 millirem.

Without the accident, an estimated 325,000 fatal cancers would have been expected among the two million people in the area. The dose now attributed to the accident should cause at most one additional fatal cancer and one additional nonfatal health effect, such as a genetic defect, the report says.

The report claims that its figures overestimate risk, however, because no reduction was made to account for shielding of people indoors; people who evacuated the area or were relocated; and the fact that the dose to internal body organs would be less than the dose to thermoluminescent dosimeters monitoring the area.

Alaska lands bill passes the House

Conservationists won a sweeping 268 to 157 victory May 16 when the U.S. House of Representatives approved a bill to set aside 125 million acres in Alaska as national parks, national forests and wildlife refuges; 67 million acres would be wilderness. Two opposing bills—far less restrictive to mining, logging and oil and gas drilling—were rejected. It's now up to the Senate, where prodevelopment forces find a friendlier climate.

H-bomb security breach?

Two nuclear-weapons-related documents, declassified and placed in the public domain at a Los Alamos Scientific Laboratory library, would have been helpful to foreign nations seeking the know-how to build a thermonuclear bomb, the Department of Energy has charged. At a congressional hearing last week, Theodore B. Taylor—a former weapons designer and now a Princeton University professor—called it the most serious security breach in the post-1940s nuclear weapons program.

The issue broke in connection with research for an appeal by THE PROGRESSIVE of a court order prohibiting its publication of an article on the hydrogen bomb. UCRL-4725—one of the documents used in preparation of the controversial article—had been on the Los Alamos shelves for four years. Another document, UCRL-5280, has been in the public domain for more than five years and could constitute an equally serious security breach, the federal government now contends.

The 29-page UCRL-4725 was pulled from public access while an American Civil Liberties Union researcher had it set aside on a library table overnight. The ACLU is representing THE PROGRESSIVE's editors in their appeal.

Clerical errors resulted in the document's erroneous declassification, the government has charged. The ACLU disputes that charge and adds that it has compiled a list of 42 other documents in the public domain at Los Alamos that—taken together—would aid foreign powers much more than the PROGRESSIVE article in designing a bomb. Los Alamos has undertaken a declassification review of its documents.

SERI seeks solar-home owners

Have you gone solar? The Solar Energy Research Institute would like to know. The government's research center is trying to build a list of names of people who have experienced the joys and sorrows of using domestic hot water systems, wind generators, passive solar-heating systems and any of a wide variety of active or hybrid systems. Respondents may be queried as the institute develops programs to help industry plan solar-marketing strategies, help the government develop policies to encourage use of available solar technologies, and just to gauge the problems and obstacles solar users have encountered. If you use solar-heating or power systems in your house, apartment or mobile home and wish to get involved, send your name, address and telephone number before July 1 to: Solar Users Information, SERI, 1536 Cole Blvd., Golden, Colo. 80401.

Facts and figures

- Growing dissension among the authors of the somatic (non-genetic) effects portion of the draft report by the BEIR (Biological Effects of Ionizing Radiation) Committee (SN: 5/12/79, p. 310) will result in the rewriting of parts of the 800-page tome, the Washington Star reported last week.

- Servicemen exposed to radiation in nuclear weapons tests during their tour of military duty (SN: 2/11/78, p. 92) cannot sue the government for the medical costs of treating possible radiation-induced injury, the Supreme Court said last week. In upholding an earlier ruling—that the government can only be sued with its own consent—it rejected the plea for medical compensation by Stanley Jaffee. The 47-year-old former soldier is suffering from inoperable cancer.

- Survivors of plutonium worker Karen Silkwood were awarded more than \$10.5 million in damages after a federal court jury found her employer, Kerr-McGee Corp., negligent in the November 1974 plutonium contamination of Silkwood and her apartment. The company will appeal the May 18 ruling.