Bomb-Building Plan Runs into Trouble

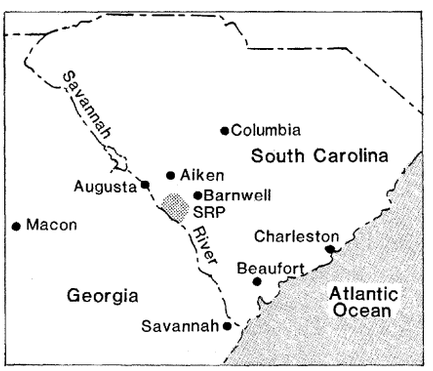
A plan to restart an aging plutonium production reactor in South Carolina has attracted local opposition and a lawsuit

The government's plan to build thousands of new nuclear bombs is running into trouble in South Carolina. In order to meet the demand for more fissile materials, the Department of Energy (DOE) says that it needs to restart an old production reactor at its plant on the Savannah River in South Carolina no later than October 1983. But that possibility has stirred up local opposition, and last week a coalition of citizen and environmental groups filed a lawsuit against DOE that could delay the restart and pinch the bomb-building schedule.

The suit, which was prepared by attorneys at the Natural Resources Defense Council (NRDC), seeks to compel DOE to prepare a formal statement on the reactor's potential environmental impact. If DOE is made to comply, it would be the first time that a reactor in the U.S. weapons program had been subjected to such an assessment. Thus far, DOE has refused, claiming that a restart of the reactor "is not a major federal action significantly affecting the quality of the human environment." NRDC disagrees, and says that operation would affect public health, endanger wetlands, create unusual risks, threaten endangered species, and violate state and federal environmental requirements.

The focus of this controversy, known as the L-reactor, was initially operated from 1954 to 1968 as one of five reactors at the Savannah River site. Three have been in almost continuous operation for 30 years, churning out tritium and plutonium for use in thousands of nuclear bombs. If the L-reactor is restarted, production capacity would increase by about a third.

DOE has been preparing the reactor for reuse since 1980, replacing piping and wiring, installing new computers, and removing some radioactive sludge. The controversy did not arise until last August, however, when the agency released the results of a $2.5-million study of the impact the reactor would have on the surrounding area.



The Savannah River Plant (shaded area): A threat to the local environment?

The study predicted, for example, that water drawn from the Savannah River to cool the reactor will be discharged at an extremely high temperature, and that trees or vegetation in the immediate path of the water will be killed. Among the affected areas will be a stream and a swamp that are already heavily contaminated with radiocesium from operations elsewhere at the plant. Once the vegetation has perished, some of the radiocesium—amounting to about 10 curies the first year and less each succeeding year—will be carried from these areas into the Savannah River. A portion of this will wind up in the water supplies of Beaufort, South Carolina, and Port Wentworth, Georgia, which serve more than 70,000 people.

DOE says that no health hazard will be created by this exposure, or from any other aspect of the reactor's operation. In an official statement, William Vaughan, the assistant secretary for environmental protection and safety, said that "foreseeable impacts from resumed operation related to water quality, air quality, solid waste, and radiological dose to the workforce and the public are expected to be somewhat less than those experienced" during the initial operating period. Therefore, he said, radiation exposure will not be significant, and the risk of any accidents will be low.

Water authorities in the Beaufort area found this less than reassuring, and they hired an environmental consultant to examine the detailed statistical tables and charts in the DOE report. The consultant, James Patterson, of the Illinois Institute of Technology, has not yet issued a final report, but his preliminary examination turned up what he said are some discrepancies between the DOE report's data and its summary. He believes that DOE may have understated the reactor's impact on fish, wetlands, and drinking water. After receiving this assessment in September, Beaufort officials persuaded the South Carolina Coastal Council, a state agency, to ask DOE for a more detailed analysis of the reactor's discharge. DOE has not yet responded.

Meanwhile, local newspapers have begun to echo the concern of citizens in the area. "Phone Home, Jim Edwards" wrote the *News and Courier* in Charleston, referring to DOE Secretary James Edwards, a native of the state. "Make the impact study," said the *News Press* in Savannah. Even Richard Riley, the governor of South Carolina, was said by an aide to be "deeply concerned" about the reactor restart, and various state agencies have begun investigations of their own. Chapters of the League of Women Voters in Georgia and South Carolina have joined with Coastal Citizens for Clean Energy, the Energy Research Foundation, and the Environmental Policy Institute to press DOE for a formal environmental impact statement and public hearings.

Much of this concern would probably evaporate if DOE decided not to discharge the reactor cooling water into the Savannah River. Agency officials acknowledge that there are a dozen or so alternatives that would result in little or no transport of radiocesium and much less thermal pollution. But all would require work extending beyond the October 1983 deadline for operation. They would also cost more money. Cooling towers similar to those at many commer-

Smith Receives NASW Prize

News and Comment reporter R. Jeffrey Smith has won the Science-in-Society Journalism Award of the National Association of Science Writers (NASW) for his series on the MX missile (*Science*, 2 April, 9 April, 16 April, 23 April, 30 April, 7 May, and 21 May). NASW cited the articles for their "outstanding writing about science and its impact on the quality of life." It is the second time Smith has won the award.

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cial nuclear power plants would cost the government $39 million and force a delay of 18 months. Construction of a cooling pond might cost as much as $72 million. In addition, any change in DOE discharge plans would constitute an admission that hazards are created by the discharges of two other Savannah River Plant reactors, both of which spew hot water into the river. Modifications of the L-reactor may force costly reforms throughout the plant site.

NRDC is also worried about the fact that the L-reactor, like the others, is not covered by a concrete vessel to contain any gases that would leak from the reactor in the event of an accident. At best, its filters would trap only a portion of the radioiodine released in the event of a partial or total core meltdown. None of the radioactive noble gases, such as krypton, would be trapped at all.

Although plant officials say the chances of such an accident are small, radiation releases stemming from lesser incidents have been recorded by DOE's own monitoring stations. In 1961, for example, the plant released an estimated 153 curies of radioiodine to the atmosphere, well above the amount released in 1979 at Three Mile Island in Pennsylvania. Plutonium, tritium, and various radioactive elements have been discovered in a variety of environmental samples taken over the years from the surrounding communities—albeit in small amounts.

Several NRDC attorneys recently wrote that given all of the potential hazards, "we have never seen such a blatant attempt by an agency to evade its responsibilities" by not preparing a formal impact statement. DOE has promised a response within a week or two.

—R. JEFFREY SMITH

Nuclear Freeze Candidates Claim Mandate

Election made little impact on balance of power on R & D in Congress; activists seek public choice on issues as well as candidates

The election results of moderate Democratic gains in the House and a standoff in the Senate are expected to bring no major changes in the lineup on science and technology issues in the next Congress. As for arms control, proponents of a nuclear arms freeze claim that the near sweep of state and local referenda amounts to a national mandate that the government pursue a mutual and verifiable nuclear arms freeze with the Soviet Union. They concede, however, that it may be difficult to translate the results at the polls into changes in U.S. policy.

Nuclear freeze initiatives won in eight of nine states and in the District of Columbia and all but two of the other 29 jurisdictions in which they were on the ballot. Organizations active in behalf of profreeze candidates for federal office are claiming substantial success, and environmentalists are asserting that a similar national effort is the most effective to date in promoting candidates favorable to environmental issues. For profreeze partisans, the next move will be to seek passage of a nuclear freeze resolution in the House and Senate after the new Congress convenes.

In Congress, the only major election day casualty in the science and technology hierarchy was Senator Harrison (Jack) Schmitt (R–N.M.) who lost to state attorney general Jeff Bingaman by a 54 to 46 percent vote. Schmitt is chairman of the Senate Appropriations subcommittee that handles biomedical research and education funds and of the Commerce subcommittee on science, technology and space. Schmitt was the target of perhaps the most intense efforts against any candidate by environmentalists because of what they viewed as his negative record on environmental issues. A down-the-line supporter of Reagan policies, Schmitt was a Republican running in a state with a 2 to 1 Democratic majority in voter registration.

A former astronaut, who is holder of a Harvard Ph.D. in geology, Schmitt was a strong advocate of both civil and military space projects and had acquired a key role in space affairs in Congress. No obvious successor is in the wings. Senator John Glenn (D–Ohio), another astronaut alumnus, has avoided close identification with space issues and is regarded as busy being a contender for a presidential nomination in 1984. Another former astronaut, Republican Jack Swigert, has been elected to a House seat. Swigert, who gained Hill experience as a top staff member on the House Science and Technology Committee, won election from a suburban Denver district.

In the Senate, two incumbent Republicans with chairmanships relevant to research and the environment kept their seats after being said to be in jeopardy. They are Orrin G. Hatch (R–Utah), chairman of the Committee on Labor and Human Resources, and Robert T. Stafford (R–Vt.), chairman of the Committee on Environment and Public Works.

The defeat in the California Senate race of Governor Jerry Brown by San Diego Mayor Pete Wilson deflected from the Senate a potential champion of high technology. Brown, who at one point advocated a space program for his state, has been an increasingly enthusiastic apostle of high technology as the key to economic growth and the creation of new jobs.

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The Senate will get a recruit with solid entrepreneurial credentials in a growth sector of business in Frank R. Lautenberg, who scored a come-from-behind win in New Jersey over the engaging grande dame of the House of Representatives, Millicent H. Fenwick. Lautenberg is credited with building a computer services and management firm, Automatic Data Processing, into a half-billion-dollar-a-year business employing 12,500 people. In a year of big campaign spending, Lautenberg reportedly put some $2.6 million of his own funds into his primary and general election campaigns.

In the Democratically controlled House, no incumbent chairmen were defeated and reassignments to committees in the new Congress are not expected to

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