telegrams went unanswered, and our contacts were much reduced in number. There were no workshops and symposia, no joint meetings. Through the resumption of these contacts, we will have an opportunity to plead not only Sakharov's case, but also that of refuseniks and so-called dissident scientists as well." ■ **R. JEFFREY SMITH**

USDA Biotechnology Review Criticized and Defended

The adequacy of federal procedures to review the safety of biotechnology products and their release into the environment has again come under question, this time by two separate groups. Activist Jeremy Rifkin, who opposes virtually all use of biotechnology, last week charged that the U.S. Department of Agriculture (USDA) had not properly reviewed an animal vaccine made from genetically altered live virus before it was approved for commercial sale. At the same time, the General Accounting Office (GAO) said that USDA needs to improve its process of assessing the safety of biotechnology products.

Rifkin asserts that the department skirted adequate review of the vaccine, which is a herpes virus modified to prevent pseudorabies. The disease commonly afflicts swine, cattle, and sheep, and causes rapid death and serious economic loss to farmers. The vaccine was licensed in January and is sold by Biologics Corporation in Omaha, Nebraska. Its use represents the first environmental release of a virus modified by recombinant DNA techniques.

Rifkin makes several assertions that he says illustrate that USDA is "not prepared to regulate biotechnology products." The department was not initially told that the vaccine was genetically engineered, he claims. When the department's regulatory arm did learn that the vaccine was engineered, USDA's biotechnology advisory committee was not informed that it was undergoing review. Also, authorities in several states where field tests were conducted were not told that the virus was genetically modified until after they approved the experiments. Rifkin plans to sue USDA on 9 April to revoke the marketing license, charging that the department did not follow administrative procedures during its review and failed to conduct an environmental assessment of the use of the vaccine.

But several scientists refute Rifkin's contentions. George Shibley, chief staff microbiologist in USDA's veterinary biologics branch, says that the company told the department when it originally applied for a license that the vaccine was made by recombinant DNA methods. The company did not initially disclose to the department the precise method it used to change the virus because the company's patent was still pending. Nevertheless, according to David Espeseth, senior staff veterinarian in the biologics branch, the company was asked for more information before field tests were conducted, including data on the stability of the mutation and the virus' ability to shed and spread. After the patent was issued, the company revealed the methods to the department.

State officials from Illinois and Minnesota said that the company told them from the beginning, when it applied for permission to field test, that the vaccine was genetically engineered. Paul Doby, superintendent of Illinois' division of meat, poultry, and livestock inspections, said that the company went out of its way to explain the vaccine to state authorities by holding a special seminar for them last summer.

USDA approved the new vaccine on the basis of experience with similar products already on the market. Three other modified live pseudovirus vaccines are commercially available, although they are not products of recombinant DNA techniques. These vaccines and the new one are derived from the same Bucharest virus. Espeseth said that the new vaccine may even be safer because the gene deletion prevents the virus from replicating.

Shibley said that although the proposal was not formally reviewed by the biotechnology committee, it was told about the vaccine and "no reservations were expressed."

The GAO report* said that, although USDA has a basic regulatory framework in place to review genetically engineered products, its specific procedures and programs need to be defined much more clearly. For example, USDA needs to clarify how it will handle requests to conduct outdoor experiments with genetically engineered products. The biotechnology committee, which is supposed to be USDA's main forum for discussing genetic engineering "lacks authority and direction."

In the absence of a stronger policy, the report says, regulators and researchers at the department have been engaged in a turf battle over who will have prime responsibility to regulate biotechnology. As a result, applications to conduct similar field tests of genetically engineered plants were reviewed by different branches of the department, which could lead to inconsistency. The report was requested by the House Committee on Science and Technology, whose chairman, Don Fuqua (D–FL), recently introduced legislation that would tighten the regulation of field tests with genetically engineered products. ■ **MARJORIE SUN**

*Biotechnology: Agriculture's Regulatory System Needs Clarification, March 1986.

Budget Squeeze May Stall Start-up of New Colliders

Operation of upgraded accelerators at Fermi National Accelerator Laboratory and the Stanford Linear Accelerator Laboratory (SLAC) may be stalled if budget recommendations of a House science subcomittee prevail in Congress. The proposed budget reductions also would extend to other general science, research, and technical analysis programs. The proposed cuts reduce program spending in fiscal year 1987 4.2% below 1986 expenditures.

Leon M. Lederman, director of Fermi, says the $25-million reduction in proposed funding could mean delaying operation of the proton-antiproton colliding beam facility or suspending operation of fixed-target experiments. Burton Richter, director of SLAC, says it may be virtually impossible to operate the upgraded electron-positron linear collider. Stanford's budget was slated to rise to $97 million from a FY 86 level of $77 million. Richter says that there is no easy way to reshuffle his budget considering the electricity, personnel, and maintenance costs of the facility.

Congressional aides and Administration officials do not hold out much hope for major changes in the funding scenario. Even informal Senate Budget Committee guidelines to committees, sources say, hold spending at or slightly above 1986 levels in many instances.

The House Science and Technology subcommittee on energy development and applications imposed cutbacks in response to instructions from House Budget Committee Chairman William Gray III (D–PA). Despite the fact that the House Budget Committee has yet to vote on actual budget marks, Gray has proceeded to negotiate a budget reduction for energy research. After first seeking a $500-million cut in outlays, congressional aides say, Gray settled with Science Committee Chairman Don Fuqua (D–FL) on a $100-million reduction in spending below FY 86 levels. The proposed cuts apply to energy research functions overseen by the Science Committee's four subcommittees. ■ **MARK CRAWFORD**