

that had been fed on the compound. Later studies by Midwest Research Institute and NCI demonstrated that inhalation of EDB increased tumors in several sites in experimental animals. Evidence of the mutagenic potency of EDB and of reproductive disorders in bulls and rats induced by EDB were also cited.

Cancellation of registration for a pesticide requires a determination that the

pesticide "no longer satisfies the statutory standard for registration." According to FIFRA language, that occurs when there is "an unreasonable risk to a man or the environment, taking into account the economic, social and environmental costs and benefits of the use of any pesticide." In other words, the law clearly states that the benefits of continued use must be weighed against the potential hazards.

The FIFRA standard is obviously much less clear-cut than that set by the Food, Drug, and Cosmetic Act which, through the so-called Delaney clause, forbids the presence of any element that is shown to cause cancer in animals regardless of level of exposure.

In December 1977, EPA published a notice that it was starting the RPAR process for EDB and invited interested persons to submit rebuttals or other information on hazards. Three years later, in December 1980, the agency took the next major step by announcing the availability of a "position document" setting forth EPA's review of the evidence.

The EPA notice said "the Agency has concluded that the presumptions for oncogenicity, mutagenicity and reproductive disorders have not been rebutted." Also announced was a "preliminary decision" to cancel use of EDB on stored grain immediately and on citrus and tropical fruits effective 1 July 1983. Other uses would be continued but on a restricted basis.

There is little disagreement that more information on EDB residue levels is needed or that workers could be better protected. Nor, in fact, is anyone really arguing that EDB is a benign chemical. The 1980 EPA notice says flatly, "It should be emphasized that the Agency believes that, in the long run, measures short of outright cancellation will not reduce the risks sufficiently to alter the conclusion that the use of EDB for quarantine fumigation of citrus, tropical fruits, and vegetables poses unreasonable adverse effects on the environment."

What to do in the short run, however, is the issue. Both the Secretary of Agriculture and the FIFRA scientific advisory panel, whose comments are formally required in the RPAR process, last spring recommended continued use of EDB on citrus. In both cases, lack of an acceptable alternative was cited as the major reason.

The advisory panel's statement notes the difficulty in evaluating the feasibility of using irradiation as an alternative to EDB and says no other alternative has been "demonstrated to be efficient, practical, and feasible from a cost standpoint."

Robert Metcalf of the University of Illinois, a member of the advisory panel when it made its recommendations on EDB, said that the committee agreed that the substance is a carcinogen and a mutagen and that it produces adverse reproductive effects. He says that EDB is chemically very like dibromochloropropane (DBCP) which was canceled by

## Nonproliferation Post Vacant

The State Department official who had been expected to take the lead in putting the Reagan Administration stamp on U.S. nuclear nonproliferation policy has been relieved of that responsibility. James L. Malone will continue to head the U.S. delegation to the Law of the Sea negotiations, which are now in progress, but will be replaced in the sub-Cabinet post of assistant secretary for Oceans and International Environment and Scientific Affairs (OES).

No successor to Malone has been named and his removal leaves in question the direction of U.S. policy for nonproliferation and reopens the chronic question of the status of science and technology in U.S. diplomacy.

Assignment of Malone full-time to Law of the Sea duties was attributed by a State Department spokesman to the need for the negotiations to have the "full and undivided attention of the senior U.S. official." Sources at State say that the decision to move Malone was made after President Reagan's announcement on 29 January that the Administration was determined to see negotiation of an "acceptable treaty" from the U.S. point of view (*Science*, 19 March, p. 1480).

State Department spokesman Dean Fisher on 9 March rejected outright a Washington *Post* report on the previous day that Malone had been removed from the OES post because he had not succeeded in increasing exports of U.S. nuclear technology.

Malone has been identified with proposals to consolidate in the State Department authority over nuclear exports which is now shared with the Nuclear Regulatory Commission (NRC). Malone was a member of the Reagan transition team for the State Department and Arms Control and Disarmament Agency and is said to be the author of the team report that put emphasis on more vigorous promotion of nuclear trade. Since his confirmation to the OES post last May, Malone has been the most active Administration spokesman on nonproliferation policy.

As to who will exercise principal influence in nonproliferation affairs at State in future, speculation centers on Under Secretary for Management Richard T. Kennedy. A former NRC commissioner, Kennedy is known to be interested in nonproliferation issues. He was ceded general oversight of nonproliferation issues early in the Administration and has worn an additional hat as ambassador to the International Atomic Energy Agency in Vienna, which deals with nuclear safeguards. But his chief duty, managing operations of the department, was thought to leave him little time to devote to making nonproliferation policy.

There is some irony in the timing of Malone's reassignment since it occurred just as three appointees to staff positions with key responsibilities in nonproliferation matters had joined OES after long delays.

OES is formally responsible for a wide range of issues involving science and technology and foreign policy. But Malone's early departure and the preoccupation of the office with Law of the Sea and nonproliferation issues in the first year of the Administration has rekindled long-term concerns about the capacity of OES to play an effective role for the United States in behalf of science and technology in international affairs.

—JOHN WALSH