DOD Sees Risks in Plutonium Trade

Several government reports released last week, 8 months past the due date Congress had set for them, uncovered a simmering debate within the Reagan Administration over the potential danger of increased commercial use of plutonium in Western Europe and Japan.

The reports evaluated International Atomic Energy Agency (IAEA) standards for the protection of plutonium or highly enriched uranium. The Defense Department, in its 40-page report, warned that the IAEA's standards "lack specificity in important respects," and could permit lax security measures that would leave nuclear materials vulnerable to use by terrorists.

The Defense Department's statement put it at odds with the rest of the administration. The State Department's 12-page report concluded flatly that "the existing international standards . . . are adequate." The Arms Control and Disarmament Agency and the Nuclear Regulatory Commission also endorsed the IAEA's guidelines, but noted that their implementation in some countries differs from that of the United States. The Department of Energy (DOE) had not released its report by press time, but a DOE official said that it supported the State Department's views.

With its report, the Pentagon served notice that it will take a close look at future shipments of plutonium or highly enriched uranium, and may block them until it is satisfied that the materials will be protected adequately from terrorist threats. The United States, under agreements for nuclear cooperation with foreign countries, can veto international shipments of plutonium produced from uranium originating in the United States. According to the Pentagon report, U.S. veto rights cover up to 50% of the plutonium, and nearly all the highly enriched uranium, that will be used commercially in foreign noncommunist countries through the year 2000.

Plutonium is particularly worrisome, said the Pentagon report, because its use is mushrooming. Britain, France, West Germany, and Japan all plan to open new plants that will separate plutonium from spent reactor fuel. By the late 1990s, the report states, "as many as 300 shipments of separated plutonium will leave reprocessing plants in Europe every year," amounting to a tenfold increase in a single decade. These shipments, according to a study by David Albright and Harold Feiveson published in *Science* last March, could contain more than 25,000 kilograms of plutonium annually.

If terrorists succeeded in capturing a small amount—perhaps 10 kilograms—of separated plutonium and had access to the necessary technical and engineering resources, they could build a crude nuclear bomb, according to a panel of former scientists at Los Alamos National Laboratory who released a study on this subject earlier this year.

Even if no bomb were built, said the Pentagon report, a terrorist in possession of plutonium could "fabricate hoaxes . . . for extortion, or to cause massive public alarm and perhaps panic."

The release of the Pentagon report was a setback for the State Department. State officials argued that the Administration should speak with one voice. They tried for more than half a year to force the Defense Department to revise its report. But the Pentagon, with backing from Senator John Glenn (D–OH) and other congressional advocates of strict controls on U.S. exports of sensitive nuclear materials, got approval from the White House to issue its independent report.

The dispute between the State and Defense Departments is rooted in an underlying disagreement about U.S. policy toward plutonium use itself. "There are a few people in DOD who would like to banish plutonium from the face of the earth, which is not going to happen," said one official.

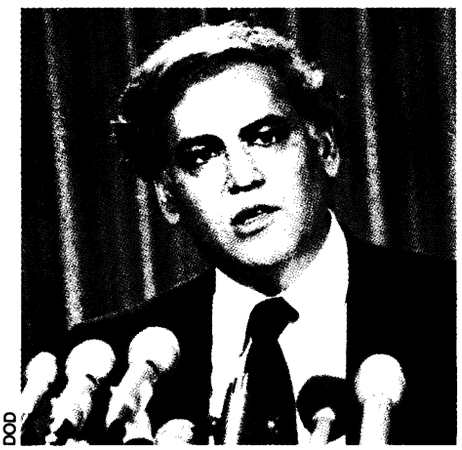
The State Department's view is that attempts to clamp down on plutonium use around the world would backfire. "You don't try to dictate to other countries whether or not they should use plutonium," said an official. "That would be a major mistake, and can only do severe damage to our interests in nonproliferation and physical protection, because countries are going to go tell us to stuff it."

Other nonproliferation experts accused the State Department of downplaying the dangers of plutonium use and avoiding open criticism that would shake up the cozy and secretive system of international nuclear cooperation. "The Defense Department is more tenacious than the State Department when it comes to questions of security, because we are not, like the State Department, burdened with the requirement to be diplomatic," said former Assistant Secretary of Defense Richard Perle at a congressional hearing on nonproliferation policy in March. "That's a great help in matters of this sort."

"If these countries are going to pursue plutonium use, they're going to have to face up to the fact that plutonium can be used in a bomb," said David Albright, staff scientist at the Federation of American Scientists in Washington. "So they're going to have to be more responsible in protecting it." ■

DANIEL CHARLES

Daniel Charles is a free-lance writer based in Washington, D.C.



DOD

Richard Perle, Pentagon adviser. *"We are not . . . burdened with the requirement to be diplomatic."*

A Plea to Close Defense Reactors

Issuing a "challenge" to the Soviet Union and the United States, eight arms control and environmental groups* joined together last week to ask the superpowers to stop manufacturing plutonium, the critical explosive in modern nuclear weapons.

The proposal for a 2-year ban on production is contained in a letter released at a press conference in Washington, D.C., on 5 November. Its signers include some luminaries of strategic or environmental policy, such as William Colby, former director of the Central Intelligence Agency; Russell Peterson, former chairman of the Council on Environmental Quality; Gerard C. Smith, chief negotiator for the SALT I treaty; Paul Warnke, former head of the Arms Control and Disarmament Agency; and Jerome Wiesner, president emeritus of the Massachusetts Institute of Technology (MIT). Architects of the plan are Frank von Hippel of the Woodrow Wilson School of Public and

*Groups endorsing the "plutonium challenge" are the Environmental Policy Institute, the Energy Research Foundation, the Federation of American Scientists, Friends of the Earth, Greenpeace, the Natural Resources Defense Council, Physicians for Social Responsibility, and the Union of Concerned Scientists.

International Affairs, and David Albright of the Federation of American Scientists.

Speakers at the press conference said the technical and political conditions are right for a moratorium on the manufacture of "fissile materials" (highly enriched uranium and plutonium). In the past, the Americans and the Soviets were mismatched in terms of material needs, so one or the other was always hostile to the idea of a ban. But in 1987, it is argued, the situation is different. Stocks are plentiful and evenly balanced; the aging production machinery is a threat to local citizens in both countries; and the advantage to be gained by acquiring a few more tons of plutonium is trivial. Rather than invest in new factories, the superpowers might agree to phase out the old ones.

Two technical problems would have to be solved. Some provision would have to be made to continue producing tritium, an essential weapons ingredient that has a half-life of only 12.5 years and so must be continuously replenished. In addition, a fairly intrusive reactor inspection and fuel accounting system would have to be agreed to.

Von Hippel and Peterson told reporters that a production ban would bring three desirable results. First, it would reinforce other controls on nuclear weapons, such as the limit on middle-range missiles now being negotiated. If the goal is to reduce the number of weapons, it will be necessary not just to destroy old warheads but to prevent the assembly of new ones. Cutting off the supply of fresh plutonium is a good way to do this, von Hippel argues. In addition, this approach would bring the superpowers under a type of inspection system already used to prevent lesser powers from making plutonium. This would strengthen the nonproliferation regime of the International Atomic Energy Agency.

Second, a plutonium ban would enable both superpowers to close old military reactors, reducing the risk of radioactive pollution. A report released by the National Research Council last month urged the U.S. government to improve safety standards at its aging facilities (*Science*, 6 November, p. 741). Rather than patch this leaky system, the environmentalists ask, why not shut it down?

Third, a ban on plutonium would save money. This aspect is particularly attractive for the deficit-ridden U.S. government, which must soon consider replacing aging defense reactors with new ones costing $10 billion to $20 billion.

The U.S. government has offered to negotiate a ban on fissile materials in the past, most recently in 1969. The Americans offered a wide variety of arms control proposals in the 1960s with little expectation of a positive response. Among the ideas rejected by the Soviets was a material production ban. But more recently, in 1982, the Soviets suggested that a moratorium on materials production might be used as a first step toward a broad arms control agreement. According to the U.S. Arms Control and Disarmament Agency, no such proposal is now under review.

However, von Hippel has discussed it with Yevgeniy Velikhov, vice president of the Soviet Academy of Sciences and an advisor to Mikhail Gorbachev. Velikhov is said to favor the idea. Jeremy Stone, executive director of the Federation of American Scientists, says, "I fully expect the Soviet government to put a plutonium cutoff on their list of desirable goals and to suggest it in the wake of this campaign." He adds that "we are now in an era when the Russians are agreeing to all kinds of verification procedures" that were not accepted in the past. Stone thinks they would agree to rigorous on-site inspections. ■ **ELIOT MARSHALL**

Networks Nix Contraceptives Ad

All three major television networks recently turned down a paid educational message about oral contraceptives on the grounds that birth control is too controversial.

The ad in question is a 30-second spot sponsored by the Association of Reproductive Health Professionals (ARHP) and funded through a grant from Ortho Pharmaceutical Corporation. The ad portrays several things that change, such as seasons, and then shows a drawing of a pill. The text says "Change. Sometimes it's obvious. Sometimes it isn't. The birth control pill has gone through a lot of changes in 25 years. We'd like you to know what they are. Ask your doctor."

A CBS spokesman told *Science* that "we serve as surrogates for our affiliates," and that only one-third of the network's affiliates have indicated that they would be willing to run ads for contraceptives. "Affiliates tell us that they would not carry or would cover over" such an ad, even though if they choose to run a network program they are required to air the ads that go with it.

An ABC spokesman said that the network has a policy against advertising for controversial products. "A lot of people don't believe in birth control." He said the network would also refuse to air ads for South Africa. "Where do you stop?" he said.

An NBC spokesman said his network is concerned about "offending moral or religious views," and said such an ad would be construed as encouraging promiscuity and sex education. He also said commercial messages are not appropriate for subjects as "complex" as contraception, which are better dealt with by the news department.

The networks will shortly be running public service announcements that urge condom use to protect against AIDS. The NBC spokesman acknowledged that if a condom manufacturer tried to buy advertising containing exactly the same content, it would probably be turned down.

Michael S. Burnhill, president of ARHP and gynecology professor at the Robert Wood Johnson Medical School in New Brunswick, New Jersey, professes himself to be appalled at the "hypocrisy" of the networks in turning down the Ortho message. He says the unwanted pregnancy rate in the United States—54%—is the highest in the industrialized world. "No one out there seems to know what's going on" as far as advances in contraception. "We are in this thing out of sheer frustration."

Morton Lebow of the American College of Obstetricians and Gynecologists (ACOG), which has endorsed the Ortho ad, says the networks have loosened up somewhat since 1985 when they initially refused to run public service announcements for an ACOG public information campaign on teen-aged pregnancy. They subsequently decided to cooperate and have run two announcements: the first, directed at teenagers, offers viewers a pamphlet explaining why unintended pregnancy is risky. The second, aimed at parents, informs them that it is never too soon to tell children the "facts of life."

Lebow says that while the networks claim birth control is controversial, a Harris poll conducted in 1986 for Planned Parenthood revealed that 74% of the respondents had no objection to TV advertising of contraceptives. He also said there has been virtually no negative public response to the ACOG public information ads.

The Ortho message has so far been accepted by 16 local TV stations. Ads are also being run in major magazines and newspapers to counter popular misconceptions about the pill. According to a Gallup survey conducted for ACOG, 76% of respondents thought oral contraceptives are associated with serious health problems and 31% believe they cause cancer. In fact, modern pills with low doses of hormones are far safer than their predecessors. ■

CONSTANCE HOLDEN