

Plutonium recycle or civil liberties?

We can't have both

by Gus Speth,
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Editor's note: This is the second of two articles on the proposed and potentially deadly practice of using plutonium in nuclear power reactors. The first article appeared in the November 23 issue of Environmental Action.

The Atomic Energy Commission (AEC) wants to permit electric utilities to use a new fuel to power their nuclear reactors — the plutonium created as a by-product in the fission process. The commercial use of this extraordinarily dangerous material — a small quantity can easily be fashioned into a nuclear bomb — and the security measures that will inevitably follow, could push the U.S. and other countries toward unprecedented restrictions of civil liberties.

The AEC has released a draft environmental impact statement on its proposal to authorize "plutonium recycle," and the final impact statement is due early next year. In its draft statement, the agency concludes that the theft of plutonium by would-be saboteurs and blackmarketeers can be prevented by an elaborate safeguards system. But a foolproof safeguards system is almost certainly an impossibility, and the system we are likely to get will cost dearly in terms of human freedom and privacy.

Plutonium safeguards necessarily involve a large expansion of police powers. Some one million persons have been trained in the handling, moving, and operation of nuclear weapons. The projected growth of the nuclear industry would require a second and ultimately much larger group of persons — in

this case civilians — who would be subjected to security clearance and other "precautions" which are commonplace in the military weapons program. Indeed, the AEC makes the following disturbing statement in its draft impact assessment of plutonium recycle:

Security problems are much simplified when it can be established with high probability that the persons who are responsible for the handling of plutonium or implementing of related safeguards programs are trustworthy. Various court rulings in recent years have been favorable to the protection of individual privacy and of individual right-to-work. These rulings have made it difficult to make a personnel background check of an individual in commercial activities to assure with high probability that he is trustworthy and, hence, potentially acceptable as a steward for the protection of plutonium. The AEC has requested legislation which would allow background checks of individuals with access to plutonium and related material accountability records.

Security and surveillance procedures at best infringe upon the privacy of employees, their families and friends. At worst, they are the instruments of repression and reprisal.

Nor will police surveillance be limited to those associated with the nuclear industry. The "Rosenbaum Report" prepared by AEC consultants last spring, made the following far-reaching recommendations:

The first and one of the most important lines of defense against groups which might attempt to illegally acquire special nuclear materials to make a weapon, is timely and in-depth intelligence. Such intelligence may involve electronic and other means of surveillance, but its most important aspect is infiltration of the groups themselves. It is not the AEC's business to conduct this sort of intelligence, but it is the AEC's business to see that those agencies of the United States Government which have intelligence gathering responsibilities, including the FBI,

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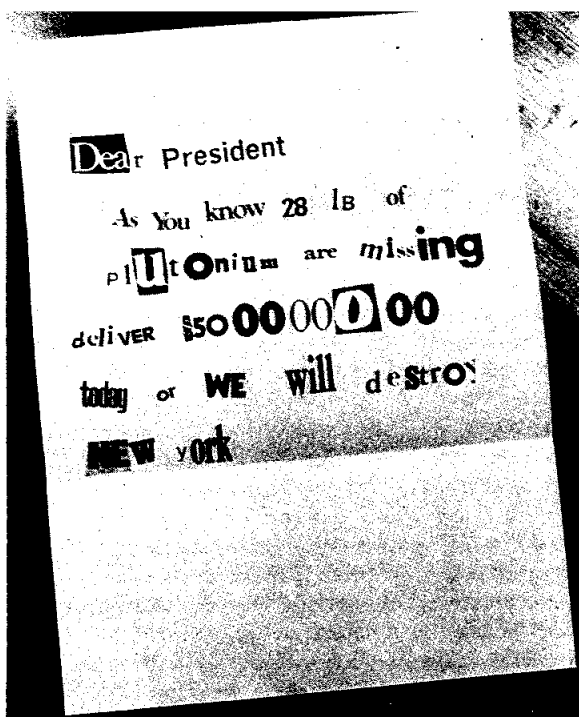


Photo by Joan Frain

CIA, and NSA, focus their attention upon this particular threat to our national defense and security.

Once the full police apparatus has been unleashed to protect us from the terrorist threat, there is no telling where the process might end. Already the signs are ominous: the *New York Times* reported August 11 that Texas state police were maintaining dossiers on nuclear power critics.

A related AEC safeguards proposal is the creation of a federal police force for the protection of plutonium plants and shipments. The draft impact statement for plutonium recycle justifies such a federal force in the following terms:

A federal security system would be less apt to have the variations in staff and capability that would be encountered in use of private security guards. In addition, it should be noted that the consequences of a successful theft or diversion of plutonium would undoubtedly have nationwide impacts and could best be handled by Federal authorities; certainly, with Federal participation, there is the potential for a larger force, more effective weapons, and better communications.

How large would such a force be. What standards should govern and restrain its operations? The AEC has already found it necessary, during the Yom Kippur War, to issue shoot-to-kill orders to personnel directing the production, shipment and storage of atomic weapons.

Once a significant theft of plutonium or other weapons material has occurred, how can it be recovered? To prevent traffic in heroin, police asked for no-knock search laws. This infringes upon one of our most cherished freedoms. To live with plutonium we may have to abandon this freedom along with others. In the presence of nuclear blackmail threats, the institution of martial law seems inevitable. It has been suggested that the widespread availability of weapons material and terrorists' targets in the nuclear fuel cycle will radically alter the power balance between large and small social units. It should be added that the threatened society will undoubtedly attempt to redress that balance through sophisticated and drastic police action.

Dr. Alvin Weinberg, former Director of the Oak Ridge National Laboratory, is one of the few persons closely associated with the nuclear power complex who has

looked carefully at the political and regulatory institutions that will be necessary to support a plutonium-based nuclear power economy. He has concluded that nuclear power will place unprecedented strains on our society:

We nuclear people have made a Faustian bargain with society. On the one hand, we offer — in the catalytic nuclear burner — an inexhaustible source of energy . . .

But the price that we demand of society for this magical energy source is both a vigilance and a longevity of our social institutions that we are quite unaccustomed to . . . In a sense, we have established a military priesthood which guards against inadvertent use of nuclear weapons, which maintains what a priori seems to be a precarious balance between readiness to go to war and vigilance against human errors that would precipitate war. Moreover, this is not something that will go away, at least not soon. The discovery of the bomb has imposed an additional demand on our social institutions. It has called forth this military priesthood upon which in a way we all depned for our survival.

It seems to me (and in this I repeat some views expressed very well by Atomic Energy Commissioner Wilfrid Johnson) that peaceful nuclear energy probably will make demands of the same sort on our society, and possibly of even longer duration.

In an unpublished paper circulated prior to a conference at the Woodrow Wilson International Center for Scholars in Washington, D.C., on June 18, 1973, Weinberg gave his views on the type of new institutions required to cope with the plutonium economy:

One suggestion (proposed by Sidney Siegal) that is relevant to the situation in the United States would be to establish a national corporation patterned after COMSAT to take charge of the *generation* of nuclear electricity. Such an organization would have technical resources that must exceed those available to even a large utility; and a high order of technical expertise in operating reactors and their sub-systems is essential to ensuring the continued integrity of these devices. [Here Dr. Weinberg suggests nationalization of the industry.]

Each country now has its own AEC that sets standards or, in some cases, actually monitors or operates reactors. Perhaps this will be sufficient forever. Yet no government has lasted continuously for 1000 years; only the Catholic Church has survived more or less continuously for 2000 years or so. Our commitment to nuclear energy is assumed to last in perpetuity — can we think of a national entity that possesses the resiliency to remain alive for even a single half-life of plutonium-239? A *permanent* cadre of experts that will retain its continuity over immensely long times hardly seems feasible if the cadre is a national body.

It may be that an International Authority, operating as an agent of the United Nations, could become the focus for this cadre of expertise. The experts themselves would remain under national auspices, but they would be part of a worldwide community of experts who are held together, are monitored, and are given long-term stability by the International Authority. The Catholic Church is the best example of what I have in mind: a *central authority* that *proclaims* and to a degree *enforces* doctrine, maintains its own long-term social stability, and has connections to every country's own Catholic Church. (Emphasis added.)

The concepts presented by Weinberg are far-reaching. The basic question they pose is: Will the plutonium economy raise socio-political problems of such magnitude that their resolu-

Accident – or murder?

Karen Silkwood, 28, was on her way to a meeting with a reporter for the *New York Times* and an official of the Oil, Chemical, and Atomic Workers Union when her car swerved into a cement structure, killing her instantly. The meeting had been called to discuss safety hazards at the Kerr-McGee Corporation plutonium processing plant where she had worked, and where she had been exposed to a large amount of radiation in an accident that the Atomic Energy Commission is still investigating.

Police concluded that Silkwood fell asleep at the wheel.

Not so, says Anthony Mazzocchi, the Washington, D.C. representative of the union. Mazzocchi believes "there is evidence to suggest that Miss Silkwood's car was hit from behind by another vehicle, causing her car to leave the road and hit the concrete culvert." He has hired a private investigator to gather more information

about the incident.

Mazzocchi has also asked the Justice Department to conduct a formal investigation. Justice officials told *EA* the department is "looking into it," but has yet to initiate a full-scale inquiry. The AEC and Oklahoma State Health Department are investigating the death, with the AEC probe scheduled to be completed before Christmas.

The Kerr-McGee plant, situated near Crescent, Oklahoma, manufactures plutonium fuel rods that will be used in an experimental liquid metal fast breeder reactor being constructed for the AEC near Richland, Washington.

At a meeting with AEC officials in Washington, D.C., in September, Silkwood and two of her colleagues from the plant charged that officials there had endangered the lives of the workers. Three technicians meanwhile provided the union with additional allegations that the plant was making some faulty fuel rods and that inspection

documents required for these rods had been falsified. If these charges are true, the safe operation of the AEC's fast breeder facility is also in question.

Kerr-McGee has promised full cooperation with any Justice Department investigation which develops.

In a frightening analysis of conditions at private plutonium processing plants, *Science* magazine, a highly respected publication of the American Association for the Advancement of Science, wrote recently, "The record reveals a dismal repetition of leaks in glove boxes; of inoperative radiation monitors; of employees who failed to follow instructions; of managers accused by the AEC of ineptness and failing to provide safety supervision or training to employees; of numerous violations of federal regulations and license requirements; of plutonium spills traced through corridors, and, in half a dozen cases, beyond plant boundaries . . ." (From news reports)

tion will be unacceptable to society? In attempting to do the impossible — live with plutonium — we may create the intolerable.

Commercialization of plutonium will bring with it a major escalation of the risks and problems already associated with nuclear power. Plutonium will further strain the already weakened regulatory fabric of the nuclear industry. Dr. Hannes Alfvén, Nobel Laureate in Physics, has described the regulatory imperatives applicable to the nuclear industry:

Fission energy is safe only if a number of critical devices work as they should, if a number of people in key positions follow all their instructions, if there is no sabotage, no hijacking of the transports, if no reactor fuel processing plant or reprocessing plant or repository anywhere in the world is situated in a region of riots or guerilla activity, and no revolution or war — even a 'conventional one' — takes place in these regions. The enormous quantities of extremely dangerous material must not get into the hands of ignorant people or desperados. No acts of God can be permitted.

Weinberg similarly stresses the need "... of creating a continuing tradition of meticulous attention to detail" and suggests that "What is required is a cadre that, from now on, can be counted upon to understand nuclear technology, to control it, to prevent accidents, to prevent diversion."

The public and its decisionmakers must seriously question whether it will be possible to attract, train, and motivate the personnel required for these functions. These must be highly qualified persons who will maintain a tradition of "meticulous attention to detail" even when the glamorous aspects of a

new technology become the commonplace operations of an established industry. We suggest that it is beyond human capability to develop a cadre of sufficient size and expertise that can be counted upon to understand nuclear technology, to control it, and to prevent accidents and diversion over many generations.

There is considerable evidence at the present time to indicate that the fledgling nuclear industry is already unmanageable. Consider, for example, a previously secret 1973 AEC study obtained and released by Ralph Nader, which concludes that:

The large number of reactor incidents [850 abnormal occurrences], coupled with the fact that many of them had real safety significance, were generic in nature, and were not identified during the normal design, fabrication, erection, and preoperational testing phases, raises a serious question regarding the current review and inspection practices both on the part of the nuclear industry and the AEC.

In addition, recall that 115,000 gallons of high-level radioactive wastes leaked from the tank at Hanford, Washington, over a period of 51 days while no one monitored the tank. Recall that the radioactive releases from the famed Shippingport reactor in Pennsylvania were higher than recorded. Recall that the executives of Consumers Power Corporation failed to notify the AEC that their radioactive gas holdup system was not functioning. Recall that two reactors were half completed before the AEC was informed that they were being constructed over an earthquake fault. Recall that Congress' General Accounting Office found the security at plutonium storage areas totally inadequate after the AEC inspectors had certified the facilities. Given all this, there is

good reason to suggest, because of the meticulous attention to detail that will be required at every stage of plutonium recycle, that a decision to proceed with plutonium recycle will precipitate an already unmanageable situation into a national crisis.

What are our options? Are there alternatives to the AEC's proposal to proceed now with plutonium recycle? We believe that there are essentially three options, each of which is preferable to the AEC's announced plan.

First, we could phase out nuclear power reactors. There is mounting apprehension among knowledgeable persons concerning the human and societal hazards of fission reactors which would only be compounded by plutonium recycle. It is important to recognize that energy conservation can be our major new "energy source" between now and the year 2000. Conservation means using our present energy more efficiently; it need not mean a change in life styles. Coupled with the use of solar and geothermal energy, energy conservation could eliminate the need for new nuclear power stations.

Second, we could continue with the present generation of light-water reactors but prohibit plutonium recycle for the foreseeable future. Such a decision would be premised upon a judgment that plutonium is too dangerous because of its toxicity and explosive potential to be allowed to become an article of commerce. Of course, we would still have plutonium to cope with, because it is produced in present-day reactors. But without plutonium recycle there should be little incentive to reprocess the plutonium out of the spent fuel, so the plutonium could remain in the spent fuel where it is effectively protected from theft and, hopefully, confined and contained.

The benefits of plutonium recycle are small. It would reduce the annual uranium requirements by about 10 to 15

percent and reduce the light water reactor fuel cycle cost by about the same amount. But the nuclear fuel cycle cost represents less than 20 percent of the total cost of power from nuclear plants, and nuclear plants by 1985 will represent less than 40 percent of the electric, or about 15 percent of the total, domestic energy supplied. In other words, plutonium recycle involves an economic savings of less than one-half of one percent.

Plutonium differs from the high-level wastes in the spent fuel in one critical respect: whereas the radioactivity of high-level wastes will continue for thousands of years, that of plutonium will continue for hundreds of thousands. Thus, while the problem of effectively storing both these materials and preventing their entering the environment are unprecedented in human history, plutonium must be contained for eons longer. For this reason, an argument can be made that, ultimately, the safest thing that can be done with plutonium is to burn or fission it in reactors, thus making it into high-level wastes rather than plutonium. But that is an activity that is best left for decades or even centuries hence — for a society more capable and less violent than today's.

Third — and we believe that this is an option that must command general support — a decision regarding plutonium recycle, and of course plutonium recycle itself, could be deferred several years until present uncertainties regarding safeguards and plutonium toxicity are satisfactorily resolved and a basis has been laid for a more intelligent judgment. Too many questions, both technical and social, are unanswered today, and until these questions are answered it would be a grave error to rush into the AEC's plutonium economy.

The basic question which must be answered is whether the public is willing to accept the risks of plutonium in exchange for the promised benefits. The national debate which must occur on this basic question has hardly begun. ■



In this nuclear-age parking lot, AEC personnel move 10-ton tanks of uranium hexafluoride, an ingredient in the uranium enrichment process. (Photo courtesy of the Atomic Energy Administration)