

AEC's Million-Dollar Deadly Soup Cauldrons

QUITE A FEW years ago, I was flying over eastern Washington when my companion, Harry Morrison of Morrison-Knudsen, the big-time construction firm, pointed down at Hanford where they make some of the stuffing for atomic bombs.

"It's not our job," Morrison said, "but they're building some mighty big tanks down there — underground tanks that cost about \$300,000 apiece. You can't get much out of the Atomic Energy Commission but what we hear is that they're building those tanks to hold radioactive wastes from the plant."

That had the ring of a salable story to me and after a few weeks I talked to AEC men who admitted that, yes, they did have a problem with the disposal of highly-dangerous — not their term — radioactive wastes, not only at Hanford, Washington, but also at Brookhaven, New York, Los Alamos, New Mexico, and Oak Ridge, Tennessee, in fact anywhere they handled uranium and plutonium and the other elements of our day.

I spent a month or so going around to AEC plants. They had a problem, all right. They still have a problem and it gets bigger every day. The AEC wants very much to handle the problem in its own way — which is to say as little as possible about the possible pollution which accompanies every step in the manufacture of the big bombs — from the uranium mines all the way to the hydrogen bomb. The AEC, when it is not entirely silent on the issue, says that it knows what it is doing and that what it does is safe and sane. The intimation is that what the AEC does is really no one's business but the AEC's.

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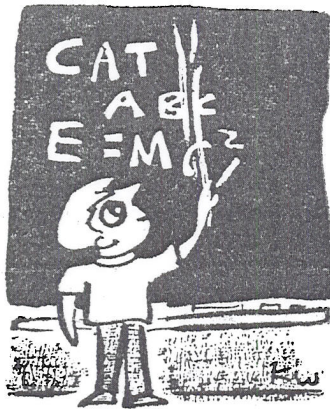
THOSE underground tanks at Hanford stick in my memory. The chain reaction which results in plutonium also spews out about 40 other radioactive waste elements and these are stored in the tanks. So hot is the brew that the liquid in these tanks — hopped up by radioactivity — churns and boils day and night, a surging, million-gallon pot of death. Strontium 90, one of the isotopes inevitably produced in the making of plutonium, is 60 times as radioactive as radium.

I asked what that meant. How dangerous is strontium 90? What would happen if this isotope somehow escaped the tanks? Several engineers whipped out slide rules and began writing down figures. The answer they came up with was this: It would take eight hours of the full flow of the nearby Columbia river to dilute one gram of pure stron-

tium 90 to the point where the water would be safe to drink. I did some figuring on my own: Four or five grams of strontium 90 a day would turn the Columbia, the sixth largest river in the country, into poison. A gram is one-twenty-eighth of an ounce.

Make no mistake. These radioactive wastes are dangerous. They cannot be destroyed. Nothing known to man can turn off their malignant rays. And they will be around a long time: Some of them have half-lives of thousands of years. Plutonium itself has a half-life of 23,000 years.

The AEC, confronted with a tremendous job, is certainly doing everything it can to confine these horrors. Under the circumstances — which means no one knows very much about



the atom and its substructure — AEC has no other course but to contain its wastes in very expensive ways. Let us hope, for the sake of the world, the AEC does its job well. The AEC says it is handling things superbly.

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THAT IS what worries me. I have been around the AEC on a number of occasions and the smugness of its brass and publicity men put me on guard. It was typical, then, that following a fire at its Rocky Flats, Colorado, plant — a fire which burned a large amount of plutonium — in May of 1969, the AEC was quickly on the streets to say: "No appreciable amount of plutonium escaped from the building and no off-site contamination resulted from the fire."

Some Denver people, some of them scientists, asked the AEC to check the Denver area, just in case. The AEC refused, but Dr. Edward Martell, a nuclear chemist with the National Center for Atmospheric Research at Boulder, made his own check. He found that highly-dangerous plutonium oxide, formed when the Rocky Flats plutonium burned, had indeed spread out over Denver in alarming amounts.

Apparently to prove Dr. Mar-

tell wrong, the AEC ordered its own check and then agreed that Dr. Martell's techniques and results were accurate. "Of course, we question his interpretation of the new information," the AEC said. "While it is true that some plutonium is escaping from the plant we don't believe it presents a significant health hazard to Denver."

Dr. Arthur Tamplin, a specialist in the physiological effects of radiation, an AEC scientist, thinks differently. As quoted in Ramparts, he said: "The Martell study shows one trillion pure plutonium oxide particles have escaped from Rocky Flats. These are very hot particles. You may only have to inhale 300 of them to double your risk of lung cancer."

"Inhaled plutonium oxides produce very intense alpha radiation dosage to lung tissue, thousands of times higher than the intensity of radioactive fallout particles and millions of times more intense than the dose from natural alpha radioactivity. An inhaled plutonium oxide particle stays in your lungs for an average of two years, emitting radiation that can destroy lung tissue. If the plutonium oxide from the fire is being distributed as Martell suggests, then it could increase the lung cancer rate for Denver by as much as 10 per cent."

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STUDIES of all this are still going on. The betting down at the corner saloon is that the AEC will be vindicated. It always has been, usually by its own tame experts. I would feel a lot better if the AEC admitted it does not have all the answers. It would not be faulted because it can not be expected to have all the right answers. After all, plutonium and strontium 90 and all the rest are man-made substances. They did not exist 30 years ago.

We talk here about the United States only. What are the other atomic nations doing? How are they protecting us against the escape of deadly gases, particles and rays?

I worry about smog and non-returnable bottles and about the sorry state of our rivers and bays. But when I really want to treat myself to a scream in the night, I think about that deadly soup in those million-gallon cauldrons at Hanford. I think of the tons of contaminated junk which has been encased in concrete and dumped into the sea. I worry about the possibility of a nuclear power plant exploding somewhere near. In a word, I am awed by a deadly power which will be only half used up in 23,000 years.