

EXCURSUS I

Michael P. Hamilton on Our Lethal Trash

The further construction of nuclear reactors to supply electrical power appears to be a necessary element of our national energy program. While such a program poses a variety of difficult decisions, some of which are outlined below, it must be emphasized from the beginning that other sources of energy are equally, if not more, unsatisfactory. This is particularly true of coal and oil, which pose both political and health hazards. The air pollution and resulting damage to people's lungs, as well as the defilement of the environment caused by many of the coal mining processes, are very serious and continuing problems.

The citizenry has become more attentive, however, to the difficulties of disposing of radioactive wastes. These wastes are the byproduct of the Department of Defense's atomic weapons production and government or privately owned nuclear energy reactors. Some states have, in effect, put a moratorium on new nuclear reactor construction until an adequate waste disposal plan is available. There is no moratorium on atomic weapons production.

Not only do we have to plan for the disposal of future radioactive wastes, but we must also consider the considerable stockpiles already accumulated and held in storage tanks at or near ground level. As much as five thousand metric tons of spent fuel are being stored in this manner at various utility reactors around the country, and forty million gallons of various kinds of waste from defense productions are being held on the Department of Defense's Hanford Reservation in the state of Washington. Some of these wastes will lose most of their radioactivity after about a hundred years, but a smaller portion will remain highly toxic for thousands of years.

The disposition of the highly toxic materials raises technical questions in three major areas: First, what are the best kinds of containers in which to put the material? Metal, ceramic, glass, and cement are all possibilities being tested and evaluated. Second, what is the best and safest way to transport the filled containers from existing locations to permanent disposal sites? Third, what kinds of permanent disposal sites are best? Salt domes, basalt or granite rock, or seabed sites? Sweden has already planned to dispose of its wastes in metal containers buried in Swedish basalt mountain regions.

While the choices between these options can be narrowed by more research, final choices regarding disposal will have to be made on the political level. I want to propose some ethical questions that we citizens need to discuss in order to provide public guidance for our legislators and civil servants.

First is the question of safety limits. The Christian concept of community extends not only back-

ward in time to embrace our forefathers, but includes all the peoples of the earth presently alive and also stretches into the future for an unknown period, determined by how long God intends our human society to continue. We do have a responsibility for the safety and welfare of those who come after us; a human life a thousand years from now should be valued as highly as a life today. The ethical issues arising from this assumption are several: Should we dispose of wastes in such a way that they are no more radioactive in the future than they have been in their natural state, before they were mined? (Some areas of the world have radioactive materials occurring naturally on or close to the surface of the earth.) Should we leave radioactive wastes in no more dangerous a state than is presently tolerated in our own society, in our own time? Should we dispose of wastes in as safe a manner as we can plan for technically, regardless of the financial cost?

Financial considerations also have an ethical dimension. How much should we spend on containers or depth of disposal to insure safety? Should we, for instance, spend approximately \$100,000 to insure the safety of each life? (It is assumed here that one can calculate the intensity of future radiation and relate it to how much radiation is required to kill one person or severely damage a hundred people who would be exposed by a release of radioactive material into the biosphere.) What, it might be asked, is the point of spending \$100,000 to save one life in the future when we are not willing to spend an equivalent amount of money to save lives in the present? (Here it is assumed that if we put equivalent amounts of money into antismoking advertisements or building dividers on busy roads, many more than one life could be saved.) Further, if contemporary generations of humans are faced with an unusual difficulty in supplying themselves with energy (the growing shortage of oil and the present lack of sufficient alternatives), should we not be entitled to pollute a little more than those who come after us?

Then there is the issue of disposal locations. In choosing suitable locations, the presence of water, which could contaminate the containers, is to be avoided, as are sites within earthquake regions or ore close to natural resources that future generations might wish to mine. Dumping on deep seabeds is also being evaluated because dispersal of wastes would probably be harmless there.

Questions such as these immediately arise: How much research on different disposal locations should we do before we make a decision to adopt one approach? What right has an individual state to say that it will not accept wastes from other states to be disposed of within its borders? Do national needs for energy and federal rights override a state's objection and, if so, by what political process will this be achieved?

The timing of decisions is also crucial. Since all decisions of a technical nature must be made without complete information, how do we know when to act when we do not know what we do not know? If we delayed making plans for permanent disposal until further research and pilot disposal schemes matured, we would know more about the dangers involved. However, if we delay permanent disposal, we will be building up even greater quantities of toxic material in temporary storage, which is probably the most dangerous of all conditions. When, then, do we move toward actual disposal? How can politicians, who have to be reelected in relatively short periods of time, make truly unselfish decisions about the safety of people living a thousand years from now when their best decisions would involve financial sacrifices made within their own terms of office?

After listening to many experts and having been involved in long political and ethical discussions, I have reached some conclusions. I believe that as a nation we do need to build more nuclear energy reactors, probably including breeders. I believe we should begin to dispose of some of the wastes in three or four different pilot programs. There is sufficient research information now available for us to select one or two means of containment and one or two different sites for large, but still experimental, disposal programs. They should have monitoring devices to detect unexpected events such as water and ground movements and undue heat. This process might cause the waste to be retrieved or further safety measures to be taken, or it might mean adopting quite different procedures in future disposal. While we may discover better technologies and sites in the next twenty years, some of the ones presently available represent an adequately safe and satisfactory option for action.

I believe that states rights will have to be subservient to national needs, but economic inducements can legitimately sweeten the burdens involved. Further, costs for radioactive disposal must begin now to be integrated into the costs for electricity produced by nuclear energy. Finally, I am more frightened by the number of atomic weapons in the world and the increasing danger of war by accident than I am of the Russians deliberately choosing to start a nuclear exchange. Thus I would support programs that would reduce production of more atomic weapons while still maintaining a retaliatory strike capability. This in turn would reduce future waste disposal tasks.

Canon Michael Hamilton of the National Cathedral, Washington, D.C., chaired the session on "Political and Ethical Implications of Disposal" at a conference on "High Level Radioactive Solid Waste Forms" sponsored by the Nuclear Regulatory Commission in Denver, December, 1978.

EXCURSUS II

Genaro Arriagada on Fidel: So Far From Marx, So Near Clausewitz

What would Marx say if he saw a Latin American professional army "building socialism"—in his name—in African countries not yet in the first stages of industrialization? Surely that would be as great a surprise for the father of scientific socialism as the realization that capitalism had not suffered the crisis he predicted.

And certainly Marx the intellectual would have enormous difficulties debating and reasoning with many political activists today who declare themselves his partisans: The concepts and categories of analysis so central to his work are missing from their language and way of thinking. As Sheldon Wolin, a professor of political science at Princeton University, has put it: "Today the military mode of thinking has all but supplanted the political mode in revolutionary circles. Wherever one turns [in revolutionary circles]...one finds sophisticated discussions of tactics, firepower, guerrilla warfare, and combat techniques, but very little in the way of searching political analysis, let alone theory."

The language and analysis of revolution today are closer to another German who preceded Marx by several decades and who was the first to present a rational analysis of war—Karl von Clausewitz. His was the phrase, often cited but little analyzed in the context of his thought, "war is the continuation of politics by other means." And the revolutionary *organizations* of this century owe their inspiration, not to Marx or to Engels, but to Gneisenau and Scharnhorst, two Prussian generals whom history records as creators of the professional army.

Marx and Engels conceived of the socialist revolution as the consequence of the development of the means of production and the rise of the proletariat in the womb of capitalist society. Certainly neither one denied the role of violence, and Engels's keen interest in military questions is well known. But violence was only the midwife of history, acting in the last stage of a process that already had matured.

Lenin gave revolutionary thought and practice a new twist. He found in military thought an aid to making operative his political schemes, which previously had lacked the force necessary to transform existing conditions. Military organization is the decisive reference point in his elaboration of the theory of the revolutionary party and, later, in his conception of the structure of the state. The conduct of war gave Lenin the framework within which to analyze and resolve political action.

Since Lenin, the definition of a revolutionary situation has come to be viewed as a military situation. Politics is a class war, and social revolution will no longer be the result of the maturation of a historical