NUCLEAR GRAVEYARD

Wanted: For the next 500 years, a town to store the state's radioactive waste.

If you stand on the metal walkway above the spent-fuel pool at the Millstone II nuclear power plant in Waterford and peer over the guard rail, down through 40 feet of clear, cobalt-blue water, you can just discern a pile of used control-rod blades resting at the bottom. The blades have recently been removed from the core of the plant's nuclear reactor, where they perform a simple but vital function: They stop the chain-reaction splitting of uranium-235 (which powers the plant) whenever the reactor must be shut down for maintenance. During their life in the reactor core, the blades are bombarded by countless millions of neutrons, and they become highly radioactive, containing massive amounts of the relatively short-lived radionuclides iron-55 and cobalt-60, and much smaller amounts of nickel-59, chlorine-36 and iodine-129, which, respectively, have half-lives of 80,000, 310,000 and 17 million years.

The blades have been placed in the pool to cool down. Because they are shielded by the water surrounding them, none of their radiation reaches the walkway above or the people standing on it. But someone exposed to the material without any protection for just 80 seconds would have a 50 percent chance of eventually dying from its effects. Further, the blades could cause cancer and genetic defects in people exposed to them even 500 years from now, perhaps much, much longer.

Despite the power, the longevity, and the danger of this material, it is defined by the federal Nuclear Regulatory Commission as low-level radioactive waste, something that Connecticut produces in large quantities. Since 1984, Connecticut has twice led the nation in the radioactive potency of the waste shipped out of state; most of it goes to a facility in Branwell, S.C., where it is deposited in a 30-foot-long earthen trench and buried 6 feet deep under compacted earth.

▲ *Is Connecticut's climate suitable for nuclear burial?*

But South Carolina and the other two states that now store all the country's low-level waste have had enough. As of Jan. 1, 1993, the facilities in South Carolina and Nevada will close, and the one in Washington state will only accept waste from the Pacific Northwest. This means that Connecticut must find a 160-to-250-acre site within its own borders where it can store the low-level waste produced here. The facility, as planned, would take waste for the next 50 years, be monitored for 100 years after that, and then be off-limits to all human activity for a total of at least 500 years. And next month the Connecticut Hazardous Waste Management Service (CHWMS), the quasi-public state agency given the unenviable task of locating a place for the facility, will name three candidate sites—an announcement that is bound to hit the selected towns with all the subtlety of a nuclear explosion.

"Siting an ash landfill or a jail is going to seem easy compared to this," says Jefferson Davis, the first selectman of Pomfret who is representing Connecticut's small towns on the Low Level Radioactive Waste Advisory Board, a citizen group working with the CHWMS. "This is the ultimate not-in-my-backyard issue. After all, we are condemning perhaps 250 acres from some town somewhere for at least, *at least*, 500 years. It's not like 20 years from now you can close this place down and say that it was a bad idea, that we should move it. You might as well say it's there forever. And nobody is going to want it." Indeed, in a Connecticut Public Broadcasting/CONNECTICUT Magazine poll of state residents conducted last November by Mt. Vernon Associates, 81 percent of the respondents said they would not live near a low-level waste facility.

BY JOEL KEEHN