

PERSPECTIVE

THE MIDLAND PROJECT

*A Bold Proposal
to Revitalize
the U.S. Waste Program*

By Brian O'Connell



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*"We must show courage
in a time of blessing
by confronting problems
instead of passing them on
to future generations."
—President George W. Bush,
Inaugural Address, 2001*

In the wartime 1940s, New York was clearly the dominant city in the United States. It was the center of commerce and wealth. Its Manhattan shoreline was lined with piers where ocean-going vessels moved people and goods across the Atlantic, before trans-Atlantic commercial aviation became commonplace. Manhattan epitomized the most powerful city in the Empire State, then the most populous state in the Union.

The nuclear age began in the 1940s with the use of the atomic bomb that ended World War II. The development of the atomic bomb was conducted in wartime secrecy under the code name *Manhattan Project*. As the nation was dedicating its resources to the war efforts, Presidents Roosevelt and Truman invoked many emergency powers. The Manhattan Project was just one example. (The project code name referred to the Manhattan District of the Army Corps of Engineers, which managed the early work. Nonetheless, it is associated with what was then the country's largest city.)

AND TODAY?

America at the early part of the twenty-first century is a much different place than it was during the period around World War II. While New York is still a commercial and financial center, the state now ranks third behind California and Texas in population and economy. There are threats from regional and transnational conflicts that differ from those of twentieth-century global conflict but are no less worrisome. Nuclear weapons are no longer on trigger alert for the superpowers, but fears exist that "weapons of mass destruction" may proliferate among rogue nations and come into the hands of terrorists.

Since the end of the Cold War, the United States and Russia and the former Soviet states have actually begun dismantling some nuclear weapons. The good news about dismantling nuclear arms is that it is happening. The bad news is that the United States does not yet have a facility for safe, permanent isolation from the human environment of the radioactive materials from those weapons. Nor is there a place for permanent disposal of the used fuel that has accumulated at more than 100 commercial nuclear power plants in 35 states.

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THE NWPA

In 1982, Congress established a plan, through the Nuclear Waste Policy Act (NWPA) of 1982, to develop an underground repository for all defense radioactive waste materials, including reactor materials from Navy nuclear ships and submarines, and much of the commercial spent nuclear fuel. The NWPA mandated that facility to begin operations in 1998.

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In 1987, Congress chose the site at Yucca Mountain, Nevada, as the only one to be studied more thoroughly. No one in the 1940s, when Nevada's population was just a little greater than 100 000, would have imagined that Nevada would be the fastest growing state in 2000. Nevada did play a part in the 1950s in developing and testing nuclear

weapons in close proximity to the candidate repository site, but it never had a nuclear power plant within its borders.

The program to select the site for the repository, design and license it, build it, move materials from 131 sites around the country, and then receive and emplace these materials underground has been troubled by a host of difficulties, not the least of which is that Nevada opposes building the facility there.

So, the nation has a plan to dispose of nuclear waste, but it has faltered over the past 20 years in carrying out that plan.

NATIONAL NEED

It may take another Manhattan Project-scale program to successfully develop and move nuclear waste materials to the geologic repository for safe, permanent disposal. Why?

- Secretary of Energy Spencer Abraham in his recommendation of Yucca Mountain to the president stated there are compelling national interests that require development of a repository.
- The scale and complexity of the project warrants a "superproject" management effort. The project will go on for decades, possibly centuries.
- Dismantling of nuclear weapons depends on a safe disposal site.

- Without successful development of the repository, the high-level radioactive waste stays at 77 locations that are safely managed today but were never intended for indefinite storage.

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- If spent fuel is not moved from reactor-site storage (as mandated by the NWPA in 1982 and as contractually obligated by the U.S. Department of Energy) we can foresee at least two consequences:

1. Additional storage costs will be incurred by utilities, which will likely sue the DOE for cost recovery and damages.

2. If added site storage is not feasible, nuclear plants (which account for 22 percent of the electricity generated in the United States) may have to shut down.

- Some elements of transportation infrastructure may need to be upgraded to further reduce shipment risks.

- Since opposition to the repository has also led to litigation that may delay the project, there may need to be extraordinary legislative or executive actions taken to place the project on an “emergency” basis, as was done for the Manhattan Project.

FUNDING

One of the ironies of the nuclear waste disposal program is that a funding mechanism put in place in 1983 by the NWPA shows promise—with some corrective action by Congress—to be more than sufficient to pay

for the civilian share of the repository costs. (The Defense Department share has been identified and is being paid on the “installment plan.”) The NWPA called for the nuclear utilities to pay for the disposal program (including transportation from reactor sites to the repository). The utilities, in turn, collect a fee of one mill per kilowatt-hour through the ratepayers’ electricity bills. Since 1983, more

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than \$20 billion has been collected from ratepayers (and in interest) for the Nuclear Waste Fund.

Congress must take the following corrective actions:

- Appropriate adequate funds to meet program needs (last year Congress appropriated less than 10 percent of the revenue from the Nuclear Waste Fund).
- Ensure that the more than \$14 billion “balance” in the Nuclear Waste Fund will be used for its intended purposes and not “lost” to deficit reduction or other unrelated use.

Congress has had difficulty recently enacting nuclear waste legislation. In 2001, Congress passed a comprehensive nuclear waste bill (S.1287), but it was unable to override a veto by President Clinton. The Clinton administration professed to support the need to build a repository if the Nevada site is found suitable but objected to the attempt in the bill to set a required radiation standard for the facility. The president objected to undermining the authority of the U.S. Environmental Protection Agency to establish environmental standards. Although directed by Congress in 1992 to set the standard, the EPA had been in a protracted struggle within the scientific community and within the federal government on the exact standard that the U.S. Nuclear Regulatory Commission would have to ensure will be met for 10 000 years when it licenses the repository. Congress may have wanted to end the impasse more than to divine what the standard itself should be, although the National Academy of Sciences did provide its advice to the EPA in 1995, per the same 1992 legislation that gave the EPA the direction to establish the standard.

Less noticed in the debate over S.1287 was the objection expressed by members of both parties that the bill “does not solve the funding problem” we previously discussed.* In a report accompanying the bill providing the DOE its annual appropriations, the House Appropriations Committee directed that the DOE review “alternative means of financing and managing” the civilian radioactive waste management program and provide a report by June 30, 2001. (The DOE has managed the radioactive waste management program by default rather than as a result of determination that it is the best suited to do so.) Such a study was done in 1984, but many of the recommendations were, in effect, shelved until after a site was chosen and determined to be suitable. The secretary of energy did provide a report but recommended deferral of consideration of alternative management approaches until after a decision to approve the Yucca Mountain site.

The review of alternative means of financing and managing the program does not say “establish a Manhattan-type project,” but it does not say *not* to. Many familiar with the troubles the repository program has faced and continues to face might agree that extraordinary manage-

ment and technical attention needs to be invested in this program if it is to achieve the national policy objectives of the NWPFA and give some assurance that the nuclear waste will, at last, be placed in an economic and environmentally safe central disposal facility. Failure to develop the central repository is a default to indefinite storage at current storage sites that were never designed and built for long-term use.

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BIGNESS, ENERGY, AND A CAN-DO ATTITUDE

If we had a Manhattan Project at the beginning of the Atomic Age, then should we not have a similar scale of national effort to enable the dismantling of nuclear weapons and the continuation of the peaceful use of nuclear power as part of our nation’s diverse energy production capability? There are indications that since nuclear power is now more cost-competitive with other fuel sources for generating electricity—and produces no greenhouse gases—there may be interest in building even more efficient “advanced design” nuclear power plants. It may not be desirable to do, however, if there is no confidence that the national nuclear waste disposal problem is solved or at least on the certain track to being solved.

If we are to have a 21st century project named after a city from a large state that embodies the energy present and future, why not call it the Midland Project? Texas is identifiable for many things in our national culture: bigness, energy, and a “can-do” attitude. Solving the nuclear waste disposal challenge of the country needs all of those elements. In his nominating convention acceptance speech, President George W. Bush said, “But I come from a different place, and it has made me a different leader. In Midland, Texas, where I grew up, the town motto was, ‘The sky’s the limit,’ and we believed it. There was a restless energy, a basic conviction that with hard work, anybody could succeed and everybody deserved a chance.”

Maybe the president will direct a focused effort, by whatever name, to ensure that a safe, permanent disposal facility will be built for the nation’s defense and civilian high-level radioactive waste. He promised in his campaign that he will make the tough decisions and that he will lead. The Midland Project could be a demonstration of that leadership. ■

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*There is some hope that Congress may improve the situation of providing adequate appropriations to the repository program. Secretary of Energy Spencer Abraham intends to propose legislation that would provide for temporary cap adjustments for at least the fiscal year 2004 budget before Congress and for the next year as well. If enacted, the “alternative funding proposal” could give funding relief for the next several years as the license application is submitted to the NRC.