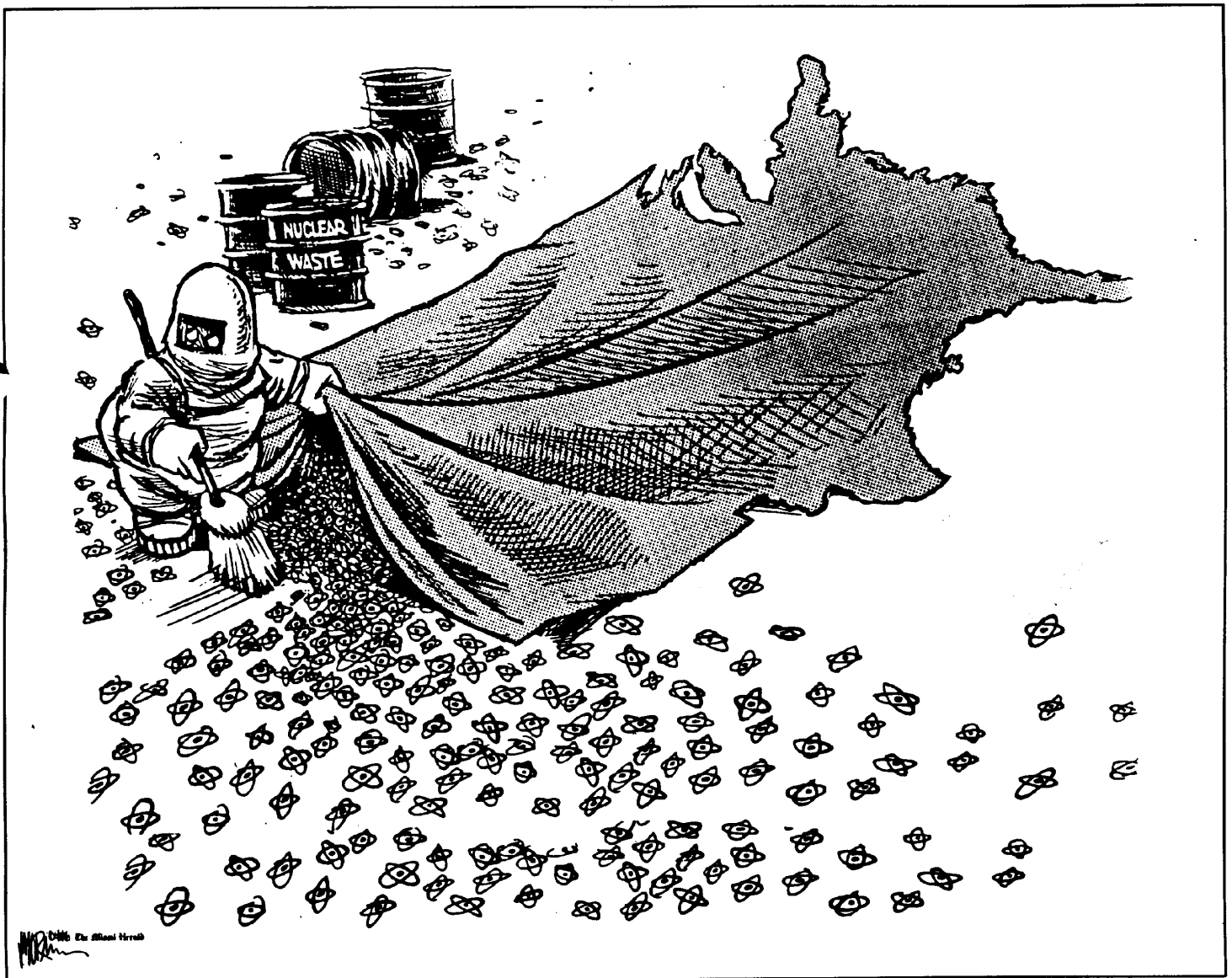


# THE WORKBOOK

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## THE WASTING OF AMERICA:

Target — Nevada

Target — New Mexico

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## The Wasting of America: Target — Nevada

by Don Hancock

As Christmas 1987 approached, Congress was faced with a nuclear waste disposal program that lacked public and scientific credibility, with sites proposed for waste storage and disposal that were technically and politically unacceptable, and with the knowledge that some members could lose elections in 1988 because of overwhelming public opposition to the program. The congressional response was to "solve" the problem by declaring that the Yucca Mountain, Nevada, site would be *the* waste disposal site and by stopping work at all other sites. As this article explains, the abrupt congressional action was not based on good science or good public policy and almost certainly will not prove to be the solution to the serious national problem of safely disposing of a growing inventory of radioactive wastes that will be dangerous for hundreds of thousands of years.

### BACKGROUND

The search for locations to dispose of high-level nuclear waste has been underway for more than twenty years, has cost billions of taxpayer dollars, and in just the last five years has cost ratepayers of nuclear utility companies more than \$3.2 billion. Beginning in the late '70s, after more than a decade of failure to site a repository, Congress spent several years developing the Nuclear Waste Policy Act (NWPA), which was signed into law in January 1983 and was supposed to set up a program for selecting nuclear waste sites that was scientifically sound, legally reviewable, and publicly acceptable (see *The Workbook*, Vol. VIII, Nos. 4 & 5, July-October 1983, pp. 149-172).

While affected states and Indian tribes and the public grew more concerned each year with the implementation of the NWPA by the Department of Energy (DOE), actions by DOE in early 1986 stirred controversy and served to bring the nuclear waste program into national prominence. On May 28, 1986, President Reagan announced that sites in Washington, Texas, and Nevada would be investigated for nuclear waste repositories, and DOE Secretary Herrington announced that investigations required by the NWPA to find a second repository site would cease (see *The Workbook*, Vol. XI, No. 2, April-June 1986, pp. 46-55).

Another controversy had arisen earlier, when in April 1985 DOE announced its selection of sites in Tennessee for a surface monitored retrievable storage (MRS) facility. The NWPA did not authorize an MRS, but required that DOE submit to Congress at least three sites and at least five alternative combinations of sites and facility designs. With no notice, DOE conducted a screening program and chose three sites in Tennessee for an MRS.

Tennessee's governor and attorney general strongly opposed the DOE plan, initially because of the lack of consultation with the state. Citizen organizing and technical review increased the opposition in Tennessee and nearby states because studies showed that an MRS was not needed, that it would significantly increase waste transportation in several states, and that it might negatively affect economic development in an area that was viewed as one of the most attractive locations in the nation for new industry. Moreover, many people believed that an MRS could become a *de facto* disposal site if technical, legal, or political problems developed in the repository program. In August 1985, the attorney general of Tennessee filed a lawsuit which delayed the submission of the MRS proposal to Congress for more than 19 months, and the governor vowed to veto any site.

DOE hoped that its actions in 1986 would end the controversy about nuclear waste disposal by substantially reducing the number of states where citizens were in an uproar about the nuclear waste program. Rather than reducing opposition to DOE's program, the announcements fueled public outrage as more people came to understand that the decisions were political in nature — subject to change at any time — and that they represented decisions about nuclear waste management that could lead the country toward a nuclear disaster. In response to the May 28 decisions, Congress drastically cut (by about 45 percent) DOE's request for funds for 1987. Moreover, in the 1986 senatorial elections in Washington and Nevada, nuclear waste was a major issue, and in both states the Republican candidates were defeated by Democrats who strongly opposed the administration's nuclear waste program. The lesson of

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the political potency of the waste issue reverberated through Congress.

## SETTING THE STAGE FOR CONGRESSIONAL ACTION

As the new Congress convened in early 1987, the controversy over the nation's nuclear waste scandal intensified (see *The Workbook*, Vol. XII, No. 1, January-March 1987, pp. 1-5), and it became clear that Congress had to act to keep some kind of waste program going and to avoid political retribution in 1988. But given the fact that more than a dozen states were directly affected and that those states, as well as several Indian tribes, the nuclear industry, the public, and environmentalists all had differing perceptions of why the nuclear waste program was flawed and different suggestions for changes, there was no obvious (or easy) solution.

But there were some obvious main participants in the congressional debate — DOE, affected state and tribal governments, the nuclear industry, local citizen groups, national environmental groups, and key congresspersons and senators. In order to show how the dynamics of the congressional process worked and why the NWSA was amended as it was, it is necessary to briefly describe the perspectives of those participants.

DOE needed congressional ratification of its implementation of the program, both because necessary funding hinged on that approval and because the federal courts would likely overturn some of DOE's decisions unless Congress indicated its support for them. The 1986 funding cuts had made it impossible for DOE to initiate site characterization activities — intensive surface and subsurface activities which include sinking large, deep (1,000 feet to 3,000 feet) shafts to potential repository levels. Thus, the program was effectively stalemated.

State and tribal governments from both first- and second-round states (see map), as well as Tennessee, all agreed that DOE had not properly implemented the NWSA, especially its consultation and cooperation provisions, and that DOE's site selection program was not scientifically sound. Washington state (along with Oregon and Indian tribes in three states) opposed the Hanford, Washington, site because any leaks from a repository there would contaminate the Columbia River. Texas and Nevada, which, along with Washington, had for years been the likeliest targets for the repository, also cited severe technical problems with the sites in their states. Those three states agreed that Congress should force DOE to proceed with the second-round program and rescreen the first-round sites. The second-round states argued that the DOE decision to limit its search for new sites to granite formations east of the Mississippi River was improper, that there was no need for a second repository, and that requirements for a second repository should be deleted from the NWSA.



Nine sites in six states were considered for the first repository. The Hanford, Yucca Mountain, and Deaf Smith sites were chosen as the top three sites on May 28, 1986. Twelve sites in seven states were considered for the second repository.

Tennessee argued that an MRS was not needed, opposed all the proposed sites in Tennessee, and urged Congress not to authorize an MRS.

The nuclear industry wanted some type of waste program to succeed, as assurance that the utility companies would not be responsible for long-term waste storage. While most in the industry preferred repositories, some promoted MRS-type facilities because they might be easier to site and cheaper to build.

Citizen groups from the affected states began meeting in 1984 and, rather than focusing on a "not-in-my-backyard" approach, they agreed to focus on the inadequacy of the site selection process and to oppose unsafe sites anywhere. In August 1986, after the May 28 decisions showed that the site selection process was politically based, groups from 13 affected states formed the National Nuclear Waste Task Force and set out to cut DOE's funding for any site-specific work in 1987. Six months later, the task force developed a four-point legislative program calling for a moratorium on site-specific work in any first- or second-round state; appointment of an independent commission to review DOE's waste program and to recommend changes to Congress; opposition to an MRS as unneeded; and support for increased funding for at-reactor storage technologies to be used until a sound disposal program is implemented. Several national environmental groups were actively involved in the congressional debate and supported the moratorium-commission idea.

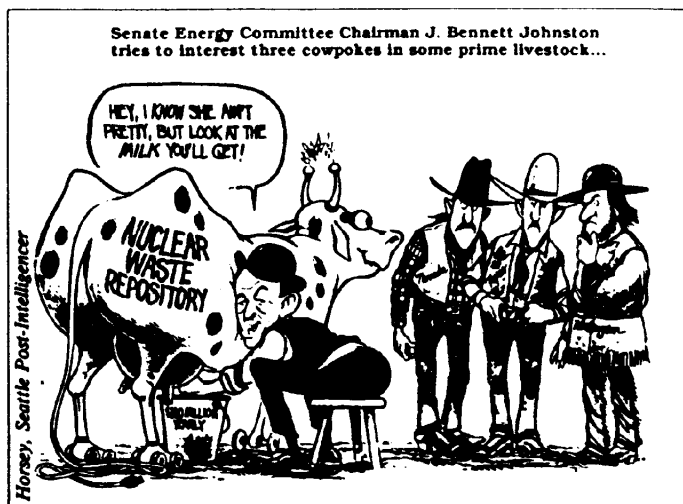
Congresspersons and senators from affected states almost universally opposed DOE's program, at least as it had an impact on their states. However, the key committee chairmen in the House — Interior Committee Chairman Morris Udall of Arizona, widely considered the "father of the NWSA," Energy and Commerce Committee Chairman John Dingell of Michigan, and

Energy and Power Subcommittee Chairman Phil Sharp of Indiana — were not from affected states and had to be convinced not only that the DOE program was so bad that congressional action was required but also that there was enough political support for a particular plan to change the program. The key senator was Bennett Johnston of Louisiana, who chaired both the Energy Committee and the Energy and Water Development Appropriations Subcommittee and was the principal supporter of an MRS.

## WHAT HAPPENED IN CONGRESS

Because of the widely differing views of what was wrong with the DOE program and how it should be changed, the conventional wisdom in early 1987 was that no substantial changes of the NWPA could gain enough support to pass Congress. The conventional wisdom was wrong.

The first months of the new Congress featured the introduction of more than two dozen parochial bills and the holding of oversight hearings filled with strong criticism of the waste program. DOE added to the controversy by acknowledging that the opening of the first repository would be delayed for five years until 2003 and by proposing to meet its self-imposed contractual obligation to begin accepting spent fuel from nuclear utilities in 1998 by using a Tennessee MRS — not a repository as required by the NWPA. The influential Chairman Udall joined in the mounting criticism.



To keep the waste program going, Senator Johnston proposed amending the NWPA to provide financial incentives to a state willing to accept a repository and waive the right to judicial review and state veto provided for in the law. The “bribe bill” was widely criticized but was the first step toward overturning the NWPA’s stepwise site selection process.

Spurred by citizen and environmental groups and states and Indian tribes, groups of congressional staffers began meeting to draft commission-moratorium bills. On July 1, Chairman Udall, along with more than 50 cosponsors

from both political parties and from first- and second-round states and Tennessee, introduced a commission-moratorium bill (H.R. 2967). That same day, 13 senators, led by James Sasser (D-Tennessee) introduced similar legislation.

Faced with a potential juggernaut which would at least temporarily stop, and could substantially change, the DOE program, Senator Johnston began a strategy of piecing together a bill to keep the DOE program going and making it so politically attractive that many affected congresspersons could not oppose it. To win second-round states, Johnston proposed to prohibit any second-round activities for 20 years. He also agreed to annul and revoke the DOE decision to pick a Tennessee MRS site and to delay choosing new sites until 1989. Further, he proposed that only one of the three first-round sites be characterized, and that the DOE decision as to which site would be chosen could wait until after the 1988 elections. On July 29, the Senate Energy Committee passed a bill (S. 1668) containing those provisions.

In the House, there was no Johnston-type bill, although Chairman Udall introduced a second moratorium-commission bill that also proposed a nuclear waste negotiator who would try to find states to volunteer to host a repository and an MRS. The stage was set for battle between the Johnston bill, which was generally supported by DOE and the nuclear industry, and bills incorporating the commission-moratorium approach, favored by citizen and environmental groups and many affected state and tribal government officials.

Since both the House Interior and Energy committees had jurisdiction over the commission-moratorium bills, it became clear that the time required for the normal congressional process — considering the bills in two committees, passing a compromise bill on the House floor, and then holding a conference with the Senate — would not allow passage of a new law until 1989. Senator Johnston moved to accelerate the process by attaching S. 1668 to each of the two bills that Congress had to pass in 1987 — the budget reconciliation bill to reduce the federal deficit and the continuing resolution to appropriate more than \$600 billion to fund the federal government’s operations in 1988.

The new nuclear waste legislation emerged from conference committee meetings held from December 14 to 17. Since only the House Interior Committee had passed any nuclear waste legislation, House conferees — which included members from Washington, Texas, and Tennessee and nearby states affected by the MRS, but no one from Nevada — had considerable leeway to act and also had caught Johnston’s let’s-get-this-over-with fever. A breakthrough came when the House agreed to the Johnston provision to eliminate the second-round program and added a surprising, new

proposal that went the Johnston bill one better. It proposed that only the Nevada site be characterized and that the Washington and Texas sites be dropped. The House plan was unacceptable to Senator Johnston because it did not authorize an MRS. For two days the conferees were deadlocked over the MRS, but a compromise was finally reached that authorized an MRS but tied its construction to repository licensing by the Nuclear Regulatory Commission.

## **THE OUTCOME: THE NUCLEAR WASTE POLICY ACT AMENDMENTS (NWPAA) OF 1987**

The highlights of the major changes of the NWPA include:

### *First repository:*

- (1) Only Yucca Mountain, Nevada, will be considered, and DOE must report to Congress if that site is found to be unsuitable.
- (2) All work (except reclamation) must cease within 90 days at the Texas and Washington sites.
- (3) A negotiator may try to arrange a benefits agreement with Nevada or some other state willing to volunteer to host a repository.

### *Second repository:*

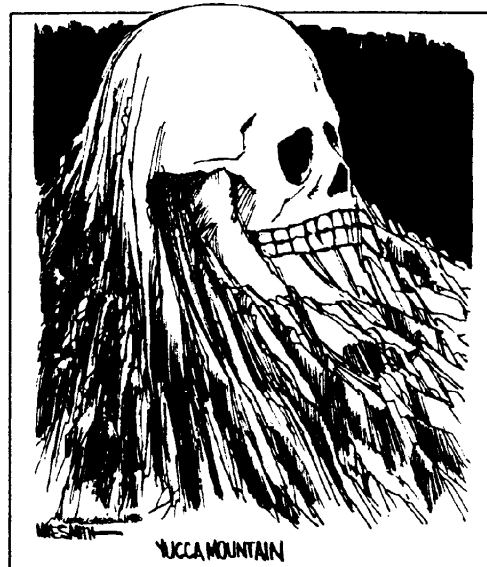
- (1) The NWPA's requirement to select a second repository was repealed.
- (2) Between 2007 and 2010, DOE must report to Congress on whether a second repository is needed.
- (3) All research related to using granite as a geologic medium was terminated.
- (4) Additional site suitability requirements were established to serve in the event that a granite repository is considered in the future.

### *MRS facility:*

- (1) An MRS was authorized, but the site may not be in Nevada and may not be selected until the repository site has been licensed for construction by the Nuclear Regulatory Commission. If constructed, an MRS could receive no more than 10,000 metric tons of spent fuel before the start of operations at a repository.
- (2) The DOE decision selecting the Tennessee sites was annulled and revoked; future decisions may not rely on previous studies.
- (3) A negotiator may try to find a state to volunteer for the MRS and receive financial benefits.
- (4) An MRS Commission was established to report to Congress about the need for an MRS by June 1, 1989.

## **IS YUCCA MOUNTAIN A GOOD SITE?**

Not enough data now exist to determine whether Yucca Mountain will meet the regulatory requirements of



NWPA. But enough data exist to raise serious questions about the suitability of the site. The data show numerous, severe technical problems that include earthquake potential, proximity to human-caused earthquakes from underground nuclear weapons tests at the Nevada Test Site, known faulting near and underneath the site, and complex geology and hydrology which make ground water flow difficult to measure.

In a report that was not made available to Congress during its December 1987 development of the NWPAA, a DOE scientist concluded in November 1987 that because of geophysical problems "serious consideration should be given to abandoning the Yucca Mountain site and declaring it unsuitable for the purposes of permanent disposal of the high-level nuclear wastes." Further, the site is far from the major sources of nuclear waste, so that spent fuel being shipped to Yucca Mountain would pass through 45 states, putting people across the nation at risk of harm from accidents during transport.

## **WILL THE NWPAA FINALLY SOLVE THE WASTE PROBLEM?**

The brief answer is almost certainly no. There are several reasons for that conclusion. (1) DOE is still in charge of the program. That agency and its predecessors have a history of mismanagement, bias, lack of credibility, and incompetence in finding and investigating nuclear waste sites. (2) There are already serious doubts as to the suitability of Yucca Mountain, and more information will likely generate even more doubts. (3) The state of Nevada has several pending lawsuits, at least some of which have a chance to overturn past DOE decisions. Any such court decision could nullify the siting decision. (4) The decision-making process of DOE and the Congress cannot be considered adequate. In the November 1987 debate on the NWPAA, the Senate rejected an amendment to the Johnston bill, proposed by Senator Harry Reid of Nevada, that public health and safety be the primary consideration in repository site

selection. Why should the public rely on the safety of the waste program when siting decisions are not based on health and safety issues?

## WHAT WILL HAPPEN NEXT?

In the short run, DOE will start site characterization activities in Nevada, and that state will continue to oppose the DOE program in court and in other ways. All work will cease in Washington and Texas. Since the MRS cannot proceed until the congressionally appointed MRS Commission reports in June 1989, the future of an MRS ultimately rests with the next administration. Moreover, the MRS may have lost its appeal for the nuclear industry since it cannot serve as a replacement for a repository. Since a negotiator cannot develop an agreement in 1988, the naming of a negotiator also will likely be left for the next administration.



The next administration will be faced with legal and technical problems that will probably force a stop in work at Yucca Mountain. If that stop occurs, four alternatives will exist for the administration and Congress.

(1) Sites previously rejected could be reconsidered. Given DOE's past history of never returning once it leaves a site, and given the proven difficulties of those sites, such action appears highly unlikely.

(2) The search for geologic repositories could be restarted with a national screening program and research on a wide variety of rock types. This approach is the

best scientifically, and the one most likely to result in choosing the best sites. However, the NWPAA prohibition against even conducting research on granite shows the political difficulty of enacting a comprehensive screening program. It is possible that some state will volunteer or be bribed to accept a repository, but it is very unlikely given the widespread opposition to nuclear waste sites. Almost certainly, no other nation would accept U.S. nuclear wastes for disposal.

(3) Geologic disposal could be abandoned, at least for several decades. The variations of this alternative include moving ahead with one or more MRS-type facilities to store wastes at or near the surface, promoting seabed or outer space disposal, or trying to develop transmutation or some other technology to detoxify or accelerate the decay of radionuclides. Surface storage alternatives may well be adopted because there will be no other alternative, but on-site storage (or off-site storage near reactors) is much preferable to an MRS in order to limit dangerous, costly transportation. Seabed or outer space disposal are currently not authorized by law and, with both the oceans and space generally being considered part of the international "common heritage," other nations would probably not agree to the disposal of U.S. nuclear wastes in either place.

(4) Rather than going through the long process of rescreening sites, battling over MRS sites, or developing new, exotic technologies, the administration or Congress could decide to use the only available geologic disposal site — WIPP in southeastern New Mexico — as a repository despite current legal prohibitions against doing so. (More on this "wild card" appears in the feature story that follows.)

## CONCLUSION

Despite more than twenty years of federal government efforts to find disposal sites for the nation's nuclear waste, it appears that no solution is likely in the near future. Given DOE's history, there seems little likelihood that the agency can successfully implement any disposal program. Congress's recent action in trying to ignore the difficulties of developing a scientific program by promoting a "quick fix" solution that chose a state with a small, weak congressional delegation also will not result in a scientifically sound, publicly acceptable nuclear waste program.

The only real solution will take time and will require that both citizens — who are the ratepayers and taxpayers underwriting the government's misadventures — and scientists force the bureaucrats and politicians to accept the fact that no short-term, political quick fix will be successful in dealing with a problem that will affect hundreds of future generations.

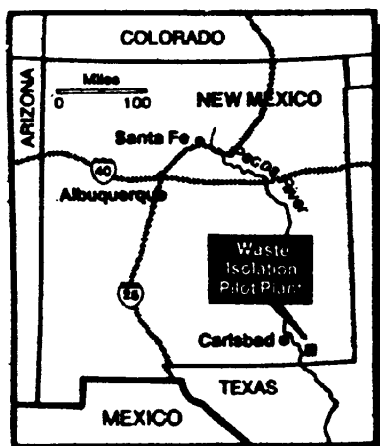
# The Wasting of America: Target — New Mexico

by Don Hancock

In October 1988, the Department of Energy (DOE) intends to begin shipping nuclear wastes generated by production of nuclear warheads to the Waste Isolation Pilot Plant (WIPP) in southeastern New Mexico. WIPP, a pilot plant in name only, would be the world's first permanent nuclear waste disposal site. DOE intends to open WIPP prior to the presidential election despite these facts: it has no approved shipping containers to transport the wastes; there are major geologic problems at the site; the site has not met — and likely cannot meet — health and safety standards; promised highway improvements have not been completed; promised training and equipment for emergency responders have not been provided; and final congressional approval has not been given.

It appears that the federal government is rushing ahead toward another technological disaster because of bureaucratically chosen schedules and the greed of some individuals and corporations. Despite DOE plans to proceed at all costs, citizens, scientists, and government officials can still influence the decision-making process and stop this dangerous, unnecessary, and expensive waste project.

This article summarizes the history of WIPP, the current unresolved issues and problems, and the future prospects.

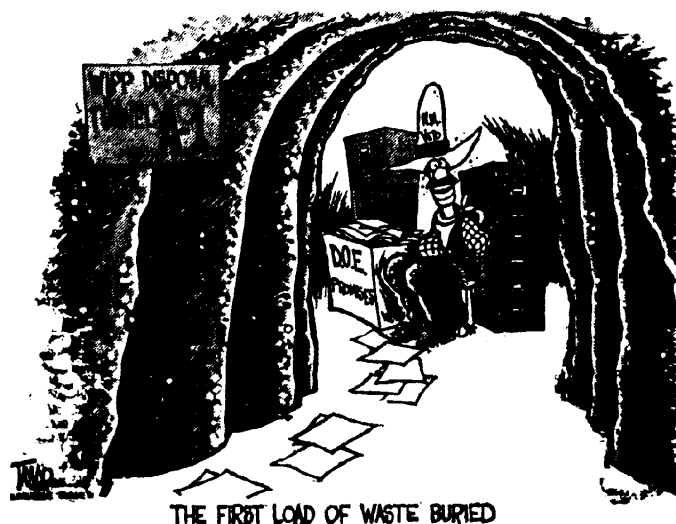


The New York Times/Dec. 17, 1987

## HISTORY OF WIPP

While the antecedents of WIPP can be traced to the National Academy of Sciences' recommendation in 1957 that nuclear wastes be disposed of in salt formations, the direct impetus came in 1969 and 1970 from fires at the Rocky Flats Plant, near Denver, Colorado, where the nation's nuclear warheads are produced. The fires caused airborne releases of plutonium that posed health risks to more than a million people and led the Atomic Energy Commission (AEC), the federal agency then in

charge of Rocky Flats, to agree that it would no longer store plutonium-contaminated wastes there. Instead, wastes were moved (and have since continuously been taken) to the AEC's (now DOE's) Idaho National Engineering Laboratory (INEL) near Idaho Falls. Idaho officials agreed to accept the wastes after being promised by AEC officials that the materials would not remain there for more than a decade. Succeeding Idaho governors, senators, and congresspersons have strongly supported WIPP because it is the only site being considered for the disposal of wastes now at INEL.



Thus, a pattern was established: The federal government will find a quick way to respond to opposition to waste storage and will promise to solve the problem eventually. That pattern was repeated in 1978 when the DOE secretary, in response to strong opposition in New Mexico to continuing changes in WIPP's purpose, promised that the state would have a veto over WIPP and that the facility would be subject to licensing by the Nuclear Regulatory Commission (NRC). The secretary made the promise, but he did not keep it. The pattern was again repeated in 1984, when DOE signed an agreement with New Mexico promising that WIPP would comply with all applicable federal and state laws, including disposal standards set by the Environmental Protection Agency (EPA). But in 1987, DOE decided that the EPA standards need not apply to WIPP until 15 percent of the wastes are emplaced.

The history of WIPP in New Mexico began in August 1972 after the AEC's first choice for a waste repository — a salt mine near Lyons, Kansas — was abandoned because of technical problems and strong political opposition from the governor and a congressman. Among the factors in the choice of southeastern New Mexico as a substitute site were the

invitation of a potash company, which hoped that the federal government would buy out its leases, and the support of some Carlsbad officials, who hoped a nuclear waste facility would bring in jobs and money. (In fact, the majority of WIPP jobs have gone to people from outside the area, and major contracts — totalling almost \$400 million — have gone to companies based outside of New Mexico. The shaft-sinking contract even went to a Japanese company.) One former state representative from Carlsbad now works for Westinghouse, the principal WIPP contractor, and the long-time former mayor is a partner in a shipping company bidding on the contract to truck wastes to WIPP. Thus, another pattern: Some individuals and companies supporting WIPP seem primarily concerned about economic gain.

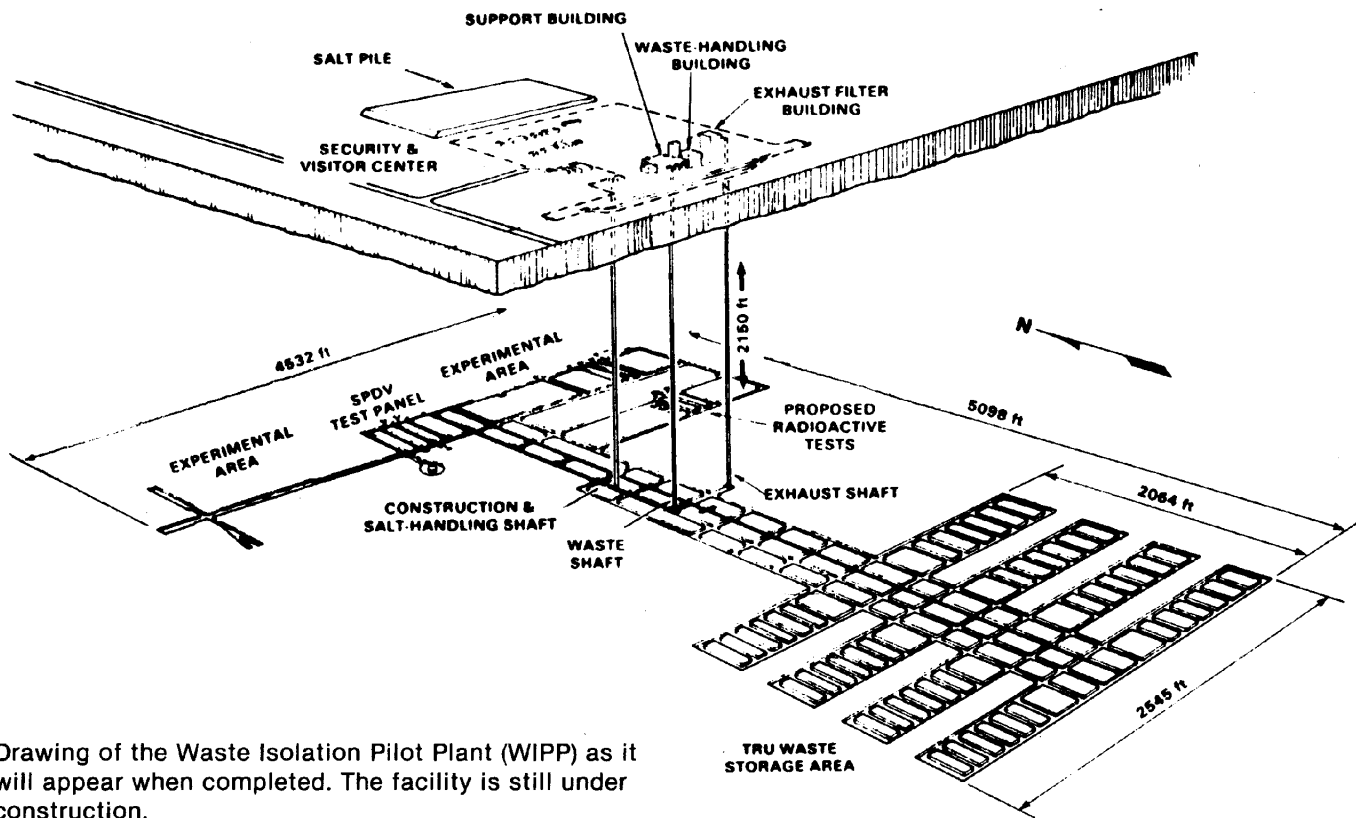
The first New Mexico site chosen for WIPP was thought to meet all technical criteria, but drilling had to be stopped because pressurized brine and very complex geology were encountered unexpectedly. After searching the area for other sites, no place was found that met all of the established criteria — so the criteria were relaxed. Thus, another pattern: Make the technical criteria fit the site; the site need not meet the criteria.

Because it is a military waste project, WIPP has been under the jurisdiction of the House and Senate Armed Services committees. Those committees want to protect “national security” and consequently believe that oversight by other federal agencies or state governments is inappropriate. Their strong opposition to the licensing of WIPP by the Nuclear Regulatory Commission and to

any state veto authority has severely limited state and public participation in decision-making about WIPP.

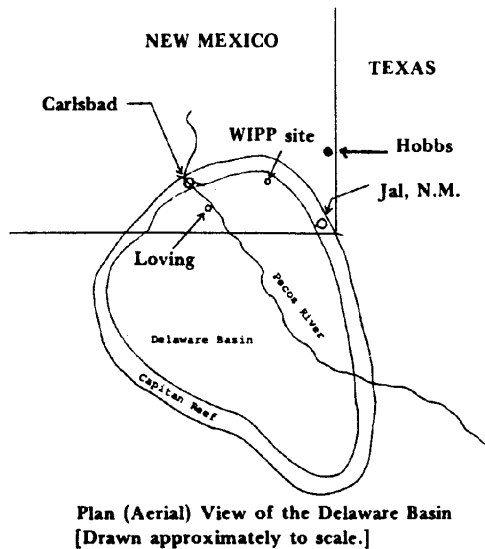
By early 1979, WIPP seemed to be stalemated by widespread opposition. Thousands of people attended public hearings in New Mexico and Texas to show their opposition to a proposed plan for the facility which had been described in DOE’s draft Environmental Impact Statement (EIS) for WIPP. The plan showed a repository with two levels, an upper one for military wastes and a lower one for hotter military wastes and up to 1,000 *commercial* spent fuel assemblies. The state of New Mexico criticized the draft EIS for inadequately analyzing health risks, socioeconomic impacts, and transportation issues. The Department of Interior (DOI), which through its Bureau of Land Management (BLM) controls the WIPP site, said that the draft EIS would “have to be substantially revised and supplemented” in order to be used for land withdrawal decisions. Other federal agencies stated their belief that WIPP should be required to meet all regulatory standards, including NRC licensing, and that the site should be compared to several others before any final choice was made.

In May 1979, the House Armed Services Committee showed its opposition to all of those proposals when it voted to terminate funds to WIPP as part of the annual DOE authorization bill. But when that bill went to the House floor in the fall, Chairman Melvin Price (D-Illinois), with no previous discussion or notice, suddenly amended it to authorize WIPP, prohibit NRC licensing, and forbid New Mexico any veto over the



Drawing of the Waste Isolation Pilot Plant (WIPP) as it will appear when completed. The facility is still under construction.





### GEOLOGY OF THE WIPP SITE

The WIPP site covers a 16-square mile area in southeastern New Mexico, about 26 miles east of Carlsbad. It is in the Delaware Basin, which was formed about 200 million years ago by an ocean that left the salt beds that are characteristic of the area today. Salt formations have features that might make them attractive as repository sites. Those features include: stable, dry rock which has been undisturbed for millions of years; no ground water flow (since fresh water would have dissolved the salt); and salt's self-sealing qualities (shafts and tunnels will eventually close up).

A major unfavorable feature of the WIPP site is the presence there of significant mineral resources — potash and oil and natural gas. Eighty percent of the nation's potash has come from New Mexico's "Known Potash District," where the WIPP site is located (although an original criterion for site selection was avoidance of that district). Natural gas reserves are also present at the site, more than a mile below the repository level. Mineral resources present problems. (1) Exploration boreholes, which dot the WIPP site, could be direct pathways for the entry of water into underlying formations. An original site selection criterion for WIPP called for the site to be at least two miles from a borehole — a criterion that was relaxed to one mile when no site could be found to meet it. (2) The presence of valuable minerals makes it likely that future generations will need or want to develop those resources, thereby compromising the integrity of the site and possibly creating pathways for wastes to move out of the repository.

Over the years, several unfavorable geologic conditions also have been discovered at the WIPP site.

(1) *Pressurized brine.* The first site was abandoned when drilling encountered a pocket of pressurized brine which gushed to the surface. The site was then moved to its present location, 3 miles farther from what was thought to be the source of the brine — the Capitan Reef, a limestone aquifer fed at least in part by the Pecos River, which rings the Delaware Basin (see figure). Recent drilling shows that brine occurs throughout the Delaware Basin, including, of course, the WIPP site. When a borehole one mile north of the center of the site struck brine in 1981, more than a million gallons flowed to the surface before the hole could be capped. The repository layout was then rotated 180 degrees so that rooms for waste would be located away from the borehole and, it was hoped, the brine. But recent geophysical testing shows that more than 15 million gallons of brine lie directly under the waste rooms, perhaps within 200 feet of the borehole at the center of the site.

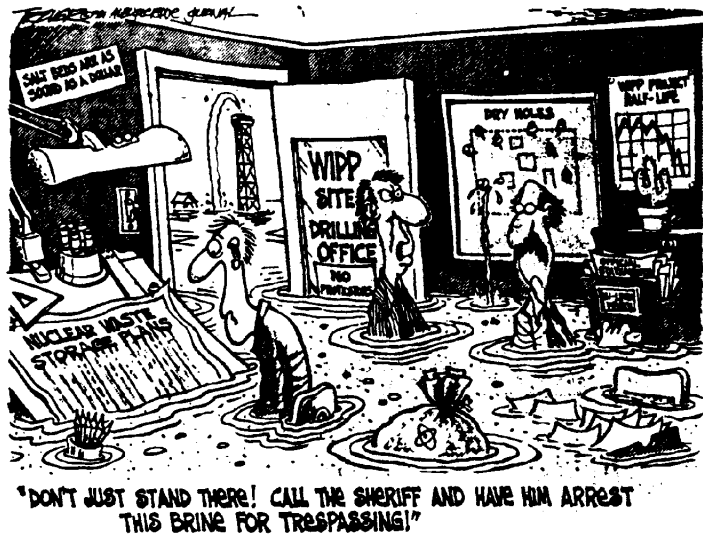
(2) *Brine in the salt rock.* The WIPP repository is located 2,150 feet below the surface in the Salado formation, a 0.3-mile-thick stratum of mostly halite that is only about 0.5 percent water. However, nonhalite interbeds may contain more water. Exact measurements still have not been taken, but recent reports from independent scientists and the New Mexico EEG indicate that the Salado formation may contain enough brine to seep into waste rooms and create a slurry of waste, which could move into the overlying Rustler Aquifer or to the surface in quantities that would exceed the EPA standards — causing immediate as well as long-term health problems.

(3) *Rock fracturing at the repository horizon.* As the salt closes up, the brittle interbeds of anhydrite crack. (Closure at WIPP is three times faster than DOE predicted). The cracking has been observed just below the floor of some rooms and likely is occurring in the interbed just above the ceiling. The fracturing could pose risks to workers (for example, by causing crevices in floors) and may create major pathways for brine inflow. This problem should prohibit the emplacement of hot wastes at WIPP, since heat greatly accelerates salt closure and would thereby increase rock fracturing.

(4) *Karst.* It was long considered that the Rustler Aquifer, about 1,300 feet above the repository level, was a low-flow formation and that any waste in the aquifer would move slowly to currently potable water supplies. Significant information now shows that channels interlace the aquifer (a condition called karst) and that ground water travel time could be as short as several months, certainly much shorter than the 1,000-year minimum time required by EPA and NRC standards.

project. After final passage in Congress, President Carter signed the bill into law, even though he opposed the WIPP provisions, because it contained provisions for many other DOE programs.

Throughout 1980, controversy and stalemate continued. Within six weeks after signing the WIPP authorization bill, President Carter announced his comprehensive nuclear waste program and called for cancelling WIPP because, as authorized, it was not needed and because his program required that all waste facilities be licensed by the NRC, be in full compliance with environmental and regulatory laws, and be subject to "consultation and concurrence" by the affected states.



The Armed Services committees would not accept cancellation of WIPP, and they kept money flowing to the project. But the Carter administration would not accept WIPP as authorized, and so DOE's final EIS, released in October 1980, called for WIPP to be delayed and for the site to be evaluated along with other potential locations for high-level waste disposal.

On January 22, 1981, two days after the Reagan administration assumed power, the stalemate was broken when the new DOE secretary announced that WIPP would proceed as authorized by Congress. DOI Secretary James Watt then reversed his department's previous position and gave approval for DOE to start subsurface activities.

New Mexico Governor Bruce King and Attorney General (now Senator) Jeff Bingaman were outraged at the DOE and DOI decisions and the total lack of consultation with the state. On May 14, 1981, before the subsurface activities actually began, the state filed suit against DOE and DOI, claiming violations of several federal laws. On July 1, the suit was settled when DOE signed a consultation and cooperation agreement with the state and agreed to undertake additional technical studies and to publish reports for the state to review. In turn, the

state agreed to allow the initial intensive subsurface site work to begin. On July 4, DOE began sinking the first shaft at WIPP. Despite other legal attempts to challenge WIPP and despite clear evidence of numerous major geologic problems (see box), DOE has continued constructing WIPP.

For more than six years after shaft sinking began in 1981, there were few opportunities to bring problems with WIPP to the attention of decision makers or the general public. Congress held not a single hearing on WIPP. However, one last decision has to be made before wastes can come to WIPP — Congress must pass a land withdrawal bill, turning the site over to DOE to use for waste disposal in perpetuity.

## THE WIPP LAND WITHDRAWAL BILL

The WIPP land withdrawal bill was introduced in the House and Senate in May 1987 by four of the five members of the New Mexico congressional delegation. Representative Bill Richardson chose not to cosponsor the bill because it contains no provisions authorizing the \$190 million needed to build highway bypasses around several cities in New Mexico. The bill was referred to three House committees — Interior, Energy and Commerce, and Armed Services. The Senate Energy Committee also has jurisdiction. For the first time, the Armed Services committees do not have exclusive control over WIPP.

The land withdrawal bill requires DOI to pay more than \$50 million to New Mexico as compensation for royalties and taxes that will be lost owing to a prohibition on potash mining and natural gas development at the WIPP site. The bill would allow the emplacement of up to 15 percent of the total volume of waste (approximately 126,000 drums) during the first five years of operation before requiring a showing that the site is in compliance with EPA standards. The bill also permits experiments with military high-level waste (HLW) once the DOE secretary produces a report on the costs and benefits of such experiments and certifies that the latter outweigh the former.

Quick passage of the bill did not occur because of concerns raised at Senate and House committee hearings last fall. The provisions regarding the EPA standards and the HLW experiments were strongly criticized, as was the lack of resolution of transportation issues.

## UNRESOLVED ISSUES

The EPA standards are intended to ensure that the repository does not pose a significant danger to public health and safety for 10,000 years — though the plutonium at WIPP will be highly toxic for more than 200,000 years. For any other repository — which, unlike WIPP, will be subject to NRC licensing requirements — DOE must demonstrate compliance with EPA

standards before construction is allowed and before waste can be emplaced. Although it previously agreed to comply with EPA standards, DOE now says that it must emplace some wastes *before* it can show compliance with the EPA standards. The situation has been further complicated by a July 1987 federal court ruling that the EPA standards are invalid because they are not stringent enough.

Compliance with EPA standards is not just an academic issue because two independent reports — one from New Mexico scientists and another from the state's Environmental Evaluation Group (EEG) — show that brine inflow may allow releases of radiation that would violate the standards. At a minimum, compliance with the standards may require engineered barriers, repackaging the wastes, or other measures that would substantially increase the costs of WIPP and could pose significant health risks to workers.

While plans for HLW experiments date from the late '70s, they are no longer justified, technically or legally, because circumstances have changed so much. A decade ago, separate facilities for military and civilian wastes seemed likely, but in 1985, President Reagan determined that all wastes should be disposed of in the same repository because of lower costs and because there are no technical or national security reasons for separate facilities. The experiments are not necessary for any other waste site, since NRC does not require such experiments for licensing. Moreover, now that Yucca Mountain has been selected as the only site to be evaluated for HLW disposal, experiments at WIPP clearly have no use, since the geology and hydrology at the Nevada site are entirely different. On the other hand, such HLW experiments would cost taxpayers millions of dollars, would endanger millions of people along transportation routes in at least six states, and would make it more likely that WIPP might later be considered for HLW disposal.

Transportation issues concern people in New Mexico and two dozen other states along WIPP's transportation routes (see map). The 1982 New Mexico-DOE agreement required that the federal government provide \$57 million to improve state highways that might be used to transport waste to WIPP. By 1987, only \$38 million had been appropriated by Congress; the remainder is included in the budget proposed for 1989. Thus, much of the highway upgrading will not be completed prior to the planned October 1988 opening of WIPP. Moreover, several New Mexico communities believe that bypasses should be constructed so that trucks avoid congested, populated areas. The 1982 agreement also required DOE to provide training and equipment for emergency response personnel at least one year prior to the first waste shipments. Such training has not been done and is not scheduled until May 1988; no equipment has yet been provided. At the December 1987 House Interior

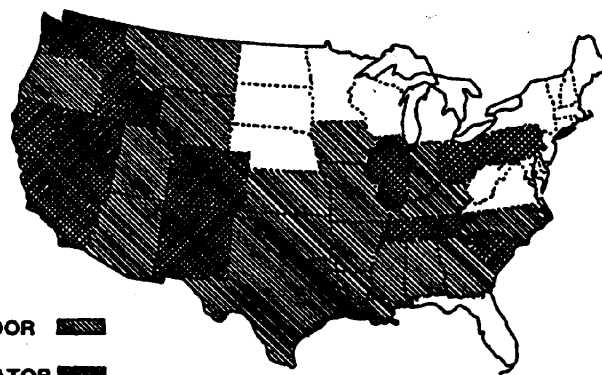
Committee hearing, Colorado representatives also requested highway and emergency response assistance based on the fact that almost 80 percent of the planned shipments will go through highly populated areas of that state.

Another transportation issue is the shipping containers for WIPP. DOE spent seven years and more than \$25 million designing, testing, and producing the TRUPACT container, which did not meet at least two requirements for transporting nuclear wastes. In February 1987, rather than building new containers that met the requirements, DOE asked the Department of Transportation (DOT) to change the requirements so that TRUPACT could be used. When strong opposition was voiced by citizens and the New Mexico congressional delegation, DOT rejected the request. DOE then announced that it would build a new container. That new TRUPACT container is still being designed and will not be submitted to NRC for certification until March 1988 at the earliest. Since NRC certification normally takes at least 18 months, either the container will not be certified for at least a year after the scheduled opening of WIPP or the normal certification procedures will be shortcut.

### WHAT HAPPENS NEXT WITH WIPP?

For 1988 there are only two possibilities — WIPP will open and begin receiving wastes or it will not open. In the longer term, there are several variations on these alternatives.

MILITARY NUCLEAR WASTE  
TRU SHIPMENTS  
POTENTIAL CORRIDOR STATES  
TO WIPP



Source: U.S. Department of Energy, Joint Integration Office, September 1986

WIPP's opening could be delayed for various reasons. The project still must get past two major hurdles — passage of the land withdrawal bill and delivery of transportation containers — and it still may provoke objections or legal challenges from the state. Given all that remains to be done, this alternative would seem a likely result were it not for the historical patterns. DOE will likely promise anything to anyone in order to open WIPP, and contractors — especially Westinghouse,

whose contract to operate the facility is worth up to \$1 billion — and local supporters will push hard for WIPP to open. The urgency to open the site is increased by the concern that a new president might cancel WIPP because it is too expensive and because it is unnecessary and not technically adequate.

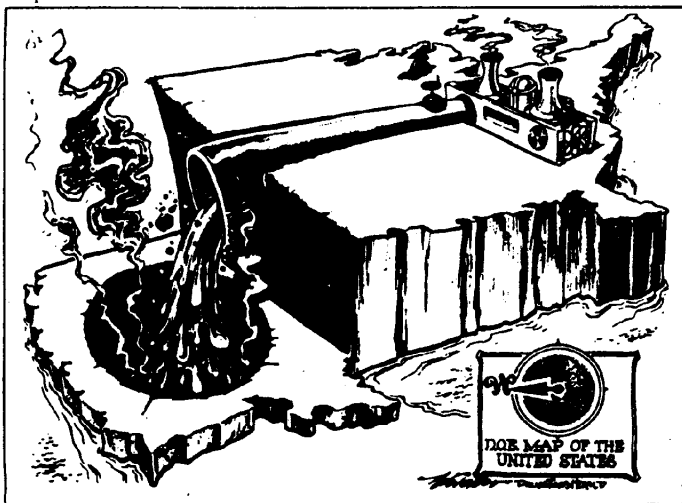
If WIPP is not opened in 1988, it could be opened in 1989 or thereafter. Given the \$700 million already spent on the project, and the continued support it receives from DOE, its contractors, and some individuals in Carlsbad, such a scenario appears likely, despite the technical inadequacies of the site.

Alternatively, a delay in opening could result in a reevaluation of WIPP and a decision to use it for other purposes (for example, experiments and testing for other waste facilities). Given the technical problems with the site, converting it to other uses would have a sound scientific and public health basis, but it is not likely to happen without the support of people throughout the country because of the bureaucratic commitment and the economic greed driving the project.

No matter what happens in the short run, the WIPP site and the surrounding area will be viewed by some as a potential site to dispose of all of the nation's nuclear waste. Already, anonymous authors have circulated two "white papers" suggesting that New Mexico volunteer to receive that waste because of the money and jobs that supposedly would be produced, and in congressional discussions on the waste program last December, the chairman of the House Interior Committee publicly suggested that WIPP be considered for HLW disposal. Moreover, if Yucca Mountain turns out to have insurmountable technical problems, as well it may, policy makers may in desperation turn to WIPP as the only other site that could be available for years.

## CONCLUSION

If WIPP becomes the world's first nuclear waste disposal site, it will be a triumph for bad science, bad



public policy, and greed. It is important to remember that WIPP is a national, not a local, issue. The threat of disaster it poses would not be limited to New Mexicans, but would extend to millions of people in more than twenty states who would be at risk from transportation accidents. And the threat to public health and safety would not be limited to this generation, but would continue for thousands of generations.

## WHAT CAN CITIZENS DO?

1) Contact your congressperson and senator to urge them to oppose the WIPP land withdrawal bill unless (a) the site is proven to be safe by complying fully with EPA standards *before the emplacement of any wastes* and (b) safe waste transportation is assured. (2) If you live along transportation routes to WIPP, contact your local government officials and emergency response personnel to see if they are prepared to handle transportation accidents involving lethal nuclear wastes. Ask them to support the development of safe containers to transport nuclear waste and to review local ordinances to ensure that they are adequate to protect public health and safety. (3) Learn more about WIPP. Contact:

Southwest Research and Information Center  
P.O. Box 4524  
Albuquerque, NM 87106  
(505) 262-1862

WIPP Project Office  
U.S. Department of Energy  
P.O. Box 3090  
Carlsbad, NM 88221-0390  
(505) 887-0586

New Mexico Environmental Evaluation Group  
P.O. Box 968  
Santa Fe, N.M. 87504-0968  
(505) 827-0556

Committee to Make WIPP Safe  
P.O. Box 40437  
Albuquerque, N.M. 87196

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