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# Rad Waste Review

October 1987



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## Authority Selects Disposal Technology

February 1987 saw the completion of a fifteen month study of alternative low-level radioactive waste disposal techniques. This effort was in response to a legislative directive that prohibited shallow-land burial in Texas. Shallow-land burial is currently the accepted method of low-level radioactive disposal throughout the country.

The study began with a review of eleven methods for disposal of low-level radioactive waste. These methods were evaluated and a ranking process was developed to compare them equally. The ranking process was developed by a citizens group that determined the importance of various safety, social, and economic factors. Concurrently, a technical group ranked the individual disposal methods against technical factors. At the end of the ranking exercise, three technologies were identified for further study:

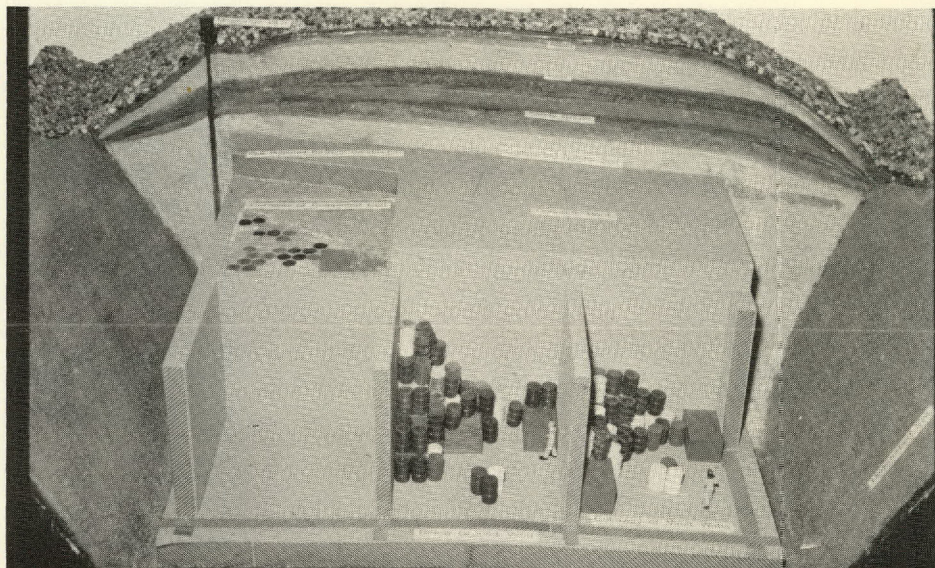
1. Below ground concrete canisters with below ground vaults;
2. Above ground concrete canisters with below ground vaults;
3. Above ground vaults.

Following this, a design basis outlining the many requirements that the three disposal methods would have to meet was prepared. Conceptual designs of disposal facilities using the three methods were then prepared. Cost estimates and an economic study for each design were performed. Each design was also subjected to a performance assessment by evaluating its ability to contain the waste under various problem conditions.

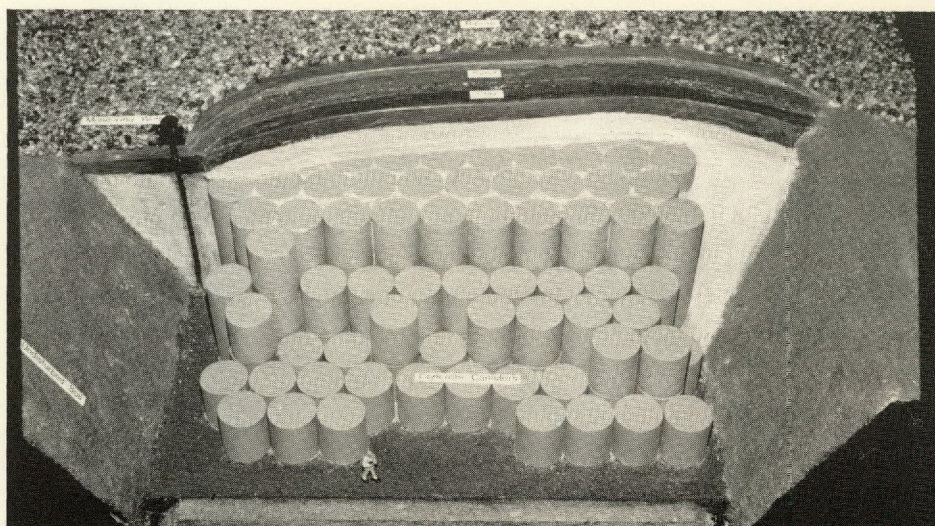
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Based upon the results of this work, the Board of Directors selected below ground modular concrete canisters with below ground vaults as the disposal method to be used at the Texas site. Conceptual design work has been completed. The completion

of the preliminary design is scheduled for early 1988. When completed, the preliminary design will describe one of the most advanced concepts for low-level radioactive waste disposal under consideration in this country.



*Below ground concrete vaults are designed with steel reinforced, 2½-foot thick exterior walls. These will be used to dispose of material requiring long term isolation from the environment.*



*Four inch thick steel reinforced concrete canisters will be used for disposal of very low levels of radioactive waste.*



# Authority Staff Meets With Mexican Officials

On Monday, September 21, 1987, several staff members of the Authority traveled to Mexico City to meet with officials of the Mexico Atomic Energy Commission, the Secretariat of Ecology, Urban Development, and Energy, and the Ministry of Foreign Relations. The meeting was hosted by the United States State Department. Also in attendance were the U.S. Nuclear Regulatory Commission and the International Boundary and Water Commission. The meeting was held in response to the Mexican government's call for additional information on the potential low-level radioactive waste disposal site near Fort Hancock.

This meeting was the second in a series of meetings designed to allow the United States and Mexico to trade information regarding the disposal of low-level radioactive waste in Texas and Mexico. The last meeting was held in Dallas.

"The meeting was very productive," said Rick Jacobi, the Authority's General Manager. "We learned quite a bit about their facility near Juarez and they learned quite a bit about our proposed site near Ft. Hancock."

Mr. John Greeves, of the U.S. Nuclear Regulatory Commission, described the federal requirements and guidelines for establishing a low-level radioactive waste disposal facility. Mr. Greeves provided a summary of the status of the three closed and three operating disposal sites in the United States. He also briefed the Mexican authorities on the present status of activities in all of the states and compacts regarding the development of new disposal sites.

Mr. Ruben Alvarado, the Authority's Chief Engineer, discussed the history of the Authority's activities and provided an update of our current work, including a detailed discussion of the site selection process and the disposal technology assessment recently completed by the Authority. His presentation was followed by a geological and hydrological summary of the Ft. Hancock site by Dr. Charles Kreidler of the University of Texas, Bureau of Economic Geology. A question and answer period followed the technical presentations.

Mr. Miguel Medina Vaillard, Director General of the Mexican Atomic Energy Commission then discussed the disposal of low-level radioactive waste in Mexico. He highlighted the activities that led to the establishment of the low-level disposal site located approximately 35 miles south of El Paso. Mr. Vaillard stated that the Mexican Government developed a low-level radioactive waste disposal facility near the town of

La Piedrera in late 1984, in response to the Cobalt 60 accident that occurred in Ciudad Juarez in early 1984. The disposal units consist of concrete lined trenches, 15 feet deep, 120 feet long, and 45 feet wide. By the end of 1984, approximately 722,000 cubic feet of low-level radioactive waste had been disposed of at the site.

On September 22, Mr. Greeves and Mr. Tom Blackburn, of the Authority's staff,

toured one of Mexico's three low-level radioactive waste disposal facilities. The facility is located in a rural, agricultural area approximately 40 miles northeast of Mexico City. The site is currently used to dispose of all medical and institutional low-level radioactive waste produced in Mexico. The disposal units consist of shallow trenches approximately 500 feet long, 10 feet deep, and 5 feet wide.

## Site Management Plan Endorsed by Legislature

The Texas Legislature amended the law governing the Authority's activities by requiring the Authority to lease land around the Authority's disposal site. This land will serve as a buffer zone around the site. The amendment further requires that the leased land shall be used for a rangeland and wildlife management area to enhance the land's productivity and economic value. The size of the area is limited to a maximum of 65,000 acres.

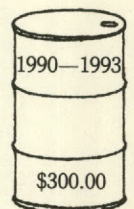
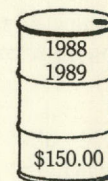
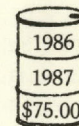
"This program will be funded by the disposal fees charged at the site," said Jack Bowmer, the Authority's rangeland ecologist. "Additional funding could come from rebates that the state receives from disposal fees that are charged by the three currently operating sites throughout the country." All low-level radioactive waste currently produced in Texas is shipped to either Washington, South Carolina, or Nevada for disposal. These states charge a \$10.00 per cubic foot surcharge, of which \$2.50 is returned to the state if certain federally mandated deadlines are met. These refunds are earmarked for use in the development of the disposal site. These funds could be used to reduce the amount of annual disposal fees needed to support the management area. The surcharge and rebate will increase to \$20.00 and \$5.00 per cubic foot in 1988, and to \$40.00 and \$10.00 per cubic foot in 1990. A typical 55 gallon waste drum is 7.5 cubic feet.

"The rebate funds could be used for a lot of the up-front costs in establishing the area," Bowmer said. Startup costs will include water development, fencing for trespass control, earth work associated with constructing spreader dams, tanks, and flow through ponds. Later projects would include brush management and revegetation efforts after a thorough evaluation of the resource potential has been completed.

"The program is expected to pay for itself within ten years," said Bowmer. "After that time it will generate funds that will be turned over to the General Land Office for use in providing funds to the schoolchildren of Texas."

The rangeland and wildlife management plan concept has been endorsed by several public interest groups including the Texas Environmental Coalition, the Texas State Soil and Water Conservation Board, the Texas Section of the Society for Range Management, and the Texas Chapter of the Wildlife Society.

## Surcharge Cost Per Drum





# Three California Towns Seeking Low-Level Radioactive Waste Site

Three California towns are hoping to be selected as the site for a low-level radioactive waste site. In Needles, a town with fewer than 5,000 residents situated along the Colorado River at the California-Arizona border, the main proponent is the Chamber of Commerce which, like its counterparts in the towns of Baker and Trona, wants the site because of the economic lift it would bring.

The Sante Fe Railroad is the major employer in Needles, and chamber officials estimate the site would bring as many as 40 new jobs. "Forty jobs means people buying homes, buying groceries," said Robin Capley, the chamber's office manager. "In a town this size, that's a lot."

Mrs. Capley, the mother of two small boys, said she had no fear of any health risk to herself and her sons, though some residents have expressed concern. "I'd rather have it sealed, 25 miles away than in a hospital waste container down the street from me," she said. "I'd rather they have a specified place for it to go than have people going out dumping it randomly."

Ken George, owner of a towing service in Baker, a community of fewer than 400 people known mainly as a gas and food stop on the highway between Los Angeles and Las Vegas, said, "I'm for anything that will help Baker grow. It'll bring people into the area."

The competition between the towns began after state officials decided several years ago to build a low-level radioactive waste site, following the passage of Federal legislation in 1985 requiring each state to do so.

Each year industries and institutions in California produce 2.7 million cubic feet of such waste, including protective smocks, gloves, and laboratory equipment from hospitals, universities, and private industry, as well as sludge from nuclear plants. The state, the third largest producer of this type of waste, after Illinois and Pennsylvania, is farther along in making plans for a waste site than any other.

By comparison, Texas currently produces less than 36,000 cubic feet of such waste. After 1990, when the state's four nuclear power plants begin operation (two at Bay City and two at Glen Rose), about 92,000 cubic feet of waste will be produced.

Clif Wilson, general manager of radio station KSFE in Needles, said that opinion among his station's listeners seemed to be running in favor of the site. "There may be a small core of people, six or seven, who were



against it from the beginning and still are," he said. "But the majority of people, once they have asked their questions, seem to feel it's no problem."

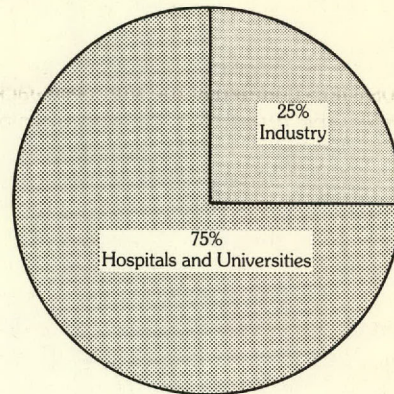
Maggie McShan, a longtime Needles resident who runs a rocks and minerals shop with her husband and is a reporter for the weekly newspaper in Needles, *The Desert Sun*, agrees. "We have our heads in the sand if we don't make plans for a properly managed site," she said. "It has to go someplace."

In Baker, where Interstate 15 cuts through the middle of town, residents were split over the danger posed by the transportation of radioactive waste. Marlene Johnson, a truck stop operator, said she feared accidental contamination from trucks carrying the waste through town. But Ann Price, President of the Baker Chamber of Commerce, said she believed trucks carrying waste for a local waste site would pose less of a hazard than existing truck traffic carrying wastes to the Beatty, Nevada site.




## Texas Low-Level Radioactive Waste Volumes

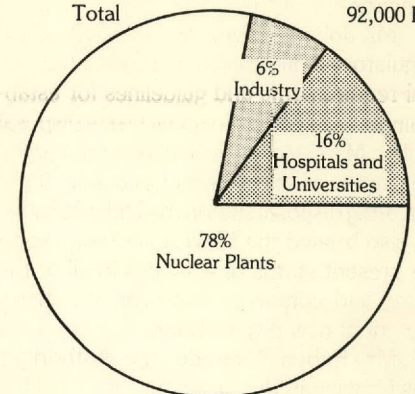
1987

	Hospitals and Universities	27,000 Ft <sup>3</sup>
	Industry	9,000 Ft <sup>3</sup>
	Total	36,000 Ft <sup>3</sup>



1990

	Nuclear Power Plants	72,000 Ft <sup>3</sup>
	Industry	5,000 Ft <sup>3</sup>
	Hospitals and Universities	15,000 Ft <sup>3</sup>
	Total	92,000 Ft <sup>3</sup>



## Appeals Court Overturns Injunction

On September 3, 1987 the El Paso 8th Court of Appeals issued a ruling upholding the Authority's position in the lawsuit filed by the County of El Paso.

The court ruled that two of the three allegations filed by the county were rendered moot by the passage of amendments to the Authority's statute. The third issue, the so-called twenty-mile rule, was determined to be premature for judicial interpretation.

The twenty-mile rule in question has to do with the reading of a section of the Authority's statute. It states that the Authority may not site a facility within twenty miles

". . . upstream or up-drainage from the maximum elevation of the surface of any reservoir project that has been constructed or is under construction by the United States Bureau of Reclamation or the United States Corps of Engineers or has been approved for construction by the Texas Water Development Board as part of the state water plan . . ."

The nearest reservoir to the proposed Ft. Hancock site that meets the requirements of the statute as it is written is Lake Amistad, approximately 300 miles to the southeast.



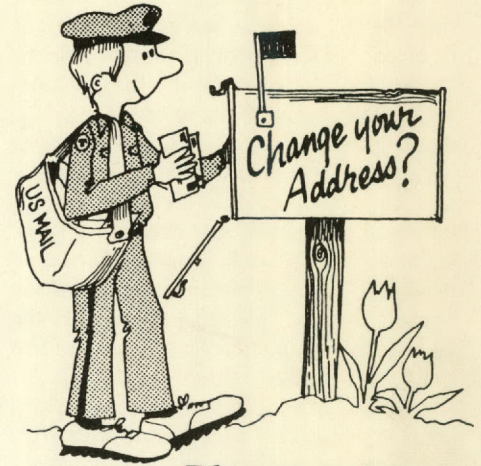
## Legislative Changes to Authority Act

During the regular and called sessions of the 70th Legislature, two important bills affecting the Authority were passed and signed into law by the Governor: House Bill 822 by Representative Saunders (D-LaGrange) and Senate Bill 62 by Senator Zaffirini (D-Laredo).

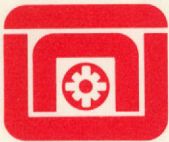
House Bill 822, sponsored in the Senate by Bill Sims of San Angelo, provides incentives and compensation to the county that hosts a low-level radioactive waste disposal site. The bill provides that the local county may form a citizens' advisory committee to oversee the operation of the site and to recommend allocation of impact assistance funds. The amount available for impact assistance is set by law to be not less than 10 percent of the gross receipts charged by the Authority. This will amount to \$400,000 to \$750,000 annually. The bill also requires the Authority's Board of Directors to hold an annual meeting with officials of the host county. Additionally, the bill provides for a 65,000 acre rangeland and wildlife management area surrounding the site.

Not long after House Bill 822 was passed, the Authority notified all county officials in the state of the potential benefits the site would bring to the host county. The mailing resulted in numerous contacts from several county administrative officials requesting more information on the benefits package. The Authority followed up on each contact. However, no suitable sites were found.

Senate Bill 62, sponsored in the House by Representative Fred Agnich of Dallas, accomplishes three things. It directs the School Land Board or the University of Texas, whichever owns the land ultimately designated as the prime site, to sell the land to the Authority. It amends the law to require that the most suitable site be found and that preference be given to state-owned land. Finally, it allows the Authority to use below ground techniques for disposal of waste, provided that the waste is contained in concrete or equivalent structures and is capable of being monitored and retrieved.



**Please inform  
us!**



### **Texas Low-Level Radioactive Waste Disposal Authority**

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