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Weekend WIPP Update

Carlsbad Nuclear Nexus

April 5, 2014

WIPP began manned re-entry into the underground facility earlier this week. Official press releases on this effort are located [here](#).

Local media coverage of the re-entry process can be found [here](#).

The April 3 WIPP town hall meeting went very well. Carlsbad Field Office Manager Joe Franco and other staff members addressed the WIPP re-entry process, the shipment of Los Alamos waste to Waste Control Specialists and upcoming WIPP training exercises. At the meeting, Carlsbad Mayor Dale Janway stressed that he is glad WCS offers a temporary solution for the Los Alamos waste, but he looks forward to the day WIPP re-opens for permanent disposal.

View the video feed of WIPP's town hall [here](#).

An additional town hall meeting is planned for 5:30 p.m. next Thursday at Carlsbad's city hall and will also be broadcast live on Livestream.

House Lawmakers Request FY15 Funding for DOE Discussions with Potential Host Communities

April 2, 2014

[LETTER](#)

Nine members of Congress sent a letter to Reps. Mike Simpson and Marcy Kaptur, Chair and Ranking member of the House Appropriations Subcommittee on Energy and Water, asking for fiscal year 2015 funding for DOE to engage with potential host communities, states and tribes and to examine reforming funding mechanisms for nuclear waste management and disposal (per recommendations from the Blue Ribbon Commission on America's Nuclear Future).

The full letter is available at the above link.

Los Alamos radioactive waste arrives in West Texas

Star-Telegram

April 2, 2014

[LINK](#)

Updated, April 2, 12:20 p.m.:

A storage facility in Andrews County, Texas, has received its first truckload of transuranic waste from Los Alamos National Laboratory, the U.S. Department of Energy and the New Mexico-based Nuclear Waste Partnership said Wednesday in a news release.

The truck arrived safely, and as many as 10 shipments per week are scheduled over the coming months, the release said.

The private facility, operated by Waste Control Specialists, will be paid up to \$8.8 million to store the waste for as long as a year.

Original story:

In a matter of days, a West Texas radioactive waste site is expected to start receiving up to 420 truckloads of radioactive junk -- some dating back to the 1940s -- from the federal government's nuclear weapons program.

The waste was not originally meant to leave New Mexico, but a sequence of events headlined by a Feb. 14 radiation leak at a disposal facility near Carlsbad has left its handlers eyeing a private collection site in Andrews County in far West Texas.

Texas and U.S. officials agree with the company's position that the waste will be stored safely -- and temporarily. But the plan has stirred concerns among environmentalists who object to the state's expanding radioactive footprint.

One of the most vocal critics, Fort Worth Democratic state Rep. Lon Burnam, said he may go to court to try to get an injunction to stop the transfer.

The waste -- clothing, tools, debris and other items contaminated by radioactive elements, mostly plutonium -- is currently stored at Los Alamos National Laboratory, which has been under pressure to remove the waste from its grounds since a series of wildfires raged dangerously close to the facility in the summer of 2011.

Under a deal with the state of New Mexico, the laboratories promised to send the waste away by June 30.

The materials were destined for the Waste Isolation Pilot Plant outside of Carlsbad, N.M. But that underground facility -- the country's only permanent disposal site for low-level radioactive materials -- has been shuttered for more than six weeks after an above-ground release exposed 17 workers to radiation.

Now, the federal government is poised to send the waste to the site in Andrews County, just across the border, for storage until the repository reopens.

Chuck McDonald, spokesman for Waste Control Specialists, which operates the Texas site, said Monday that the truckloads would arrive "within the next week or two."

The company, formerly owned by the late Dallas billionaire Harold Simmons and one of few sites in the nation that is licensed to store low-level radioactive waste, has been storing contaminated items from shuttered reactors and hospitals since 2012.

"We are pleased that WCS is in a position to provide temporary storage for this waste while the WIPP is shutdown," Rod Baltzer, president of the company, said in a statement. "This will allow the Los Alamos National Laboratory to meet its goal of having this material removed by this summer so it can no longer be threatened by wildfires."

When the Legislature paved the way for waste storage more than a decade ago, the facility was supposed to accept only waste from Texas and Vermont, but the Legislature has since expanded the site's scope to accept waste from other states.

"It is so appalling," said Burnam, the Democratic lawmaker from Fort Worth. "The way it's evolved, Texas is going to be the sole repository,

which means that decades from now, the state of Texas will be the fiscally responsible agent for dealing with the impacts of any mishaps."

Burnam, a fierce critic of WCS over the years, said he might seek a court injunction to halt the waste transfer. "That would have to come quickly," he said.

Trained and ready

Baltzer said that all incoming canisters would be inspected to ensure that they are sealed. "WCS has a sophisticated inspection and monitoring system in the buildings where the canisters will be stored to ensure the safety of our employees and the environment," he added.

WCS said its grounds are ringed by asphalt and caliche roadways, protecting it from fires, and that the site has a sprinkler system and its own fire truck, adding that its workers are "well trained and experienced in handling this type of waste."

Citing uncertainty about when the repository will be ready to reopen, the U.S. Department of Energy has not proposed an end date for the waste's time in Texas, but said it would last no longer than one year, according to the agency's correspondence last week with Texas regulators.

In a March 21 analysis, the agency concluded that it could safely store the Los Alamos waste in West Texas and that the plan did not merit a new environmental review. There have been minor spills and leaks at the facility, the analysis said, but those had been localized and properly cleaned up.

"WCS has accumulated more than a decade of environmental monitoring data that show no member of the public or the environment has been affected by operations at the facility, including routine and accident risks," the analysis said.

Dale Klein, associate director of the University of Texas Energy Institute and the former chairman of the U.S. Nuclear Regulatory Commission, said the waste would probably be safely transferred and stored, but he questioned the logic behind moving the waste before it goes to the repository.

"Any time you have to handle the material twice, you're exposing people unnecessarily," he said.

'A nuclear empire'

Environmentalists object to the idea of bringing more nuclear waste to Texas and say they would like to see further analysis of the proposal.

"They're building a nuclear empire. It's just one thing after another, and there's no telling where this leads," Karen Hadden, executive director of the Sustainable Energy and Economic Development Coalition, said of the waste company.

Environmental groups have closely scrutinized WCS as it has expanded the scale of the waste it accepts. That includes the Sierra Club, which

has challenged the site's permits in court, saying the group was never given a hearing to voice its objections to the project -- namely that groundwater would enter its disposal wells.

The Texas Commission on Environmental Quality granted the company initial licenses in 2007 after conducting geological studies of the area. Three staff members at the commission resigned in protest after the licenses were granted, saying they did not believe the area had been proved safe for waste disposal.

TCEQ said it would work with the Energy Department to ensure that any material the WCS site accepts would meet state requirements.

Environmentalists have long said they expect the WCS site to ultimately accept hazardous waste from around the nation for years to come. One concern is that to get there, much of the waste would be shipped over large swaths of the state, including through the Fort Worth-Dallas area on rail and highways. The disposal site is about 350 miles west of Fort Worth.

State, DOE release new legal proposals for Hanford cleanup

Tri-City Herald
March 31, 2014

[LINK](#)

Richland -- The state of Washington and the Department of Energy each released very different plans Monday to amend the court-enforced consent decree setting deadlines for retrieving radioactive waste from Hanford tanks and treating the waste for disposal. Gov. Jay Inslee criticized DOE's plan as containing little specific information.

But Energy Secretary Ernest Moniz said he was pleased that the state and federal government agreed that DOE should move forward with treating waste at the vitrification plant's Low Activity Waste Facility while technical issues are resolved elsewhere.

The state's plan to revise the consent decree would delay some near-term deadlines but require all treatment of radioactive waste to be completed as required under the Tri-Party Agreement by 2047.

The state plan also would require DOE to build four new double-shell tanks by 2022 and then four more by 2024 to safely hold 8 million gallons of waste now in leak-prone single-shell tanks.

The proposal would require the Low Activity Waste Facility to come on line sooner than the current schedule for the full plant.

But it would allow a four-year delay in operations at the High Level Waste Facility and a six-year delay for the Pretreatment Facility, both of which have technical issues that could affect the safe and efficient treatment of waste.

DOE indicated in its proposal that it may resolve technical issues at the Pretreatment Facility by moving to a simpler design with smaller mixing tanks within the building that could improve the ability to keep waste mixed.

DOE is proposing that the Low Activity Waste Facility finish "hot" commissioning using radioactive waste in 2022. Under the current consent decree, DOE is required to have the vitrification plant at full operations then.

DOE also would extend the deadline by one year to have all 16 tanks in the C Tank Farm emptied by September 2015.

DOE has notified the state that all remaining deadlines for the vitrification plant are at risk. It also has said it may not have the last two C Farm tanks emptied by September of this year.

DOE already has missed one consent decree deadline and will miss more in September, according to the state.

"It is now time to take legal action," said state Attorney General Bob Ferguson.

The federal government has until April 15 to accept the state's proposal, according to Ferguson.

If it does not, the state and federal government will enter dispute resolution for 40 days.

The state then could ask the court to intervene. The consent decree was the result of a 2008 lawsuit filed by the state.

Check back for updates.

Candice Trummell Has Been Named EM's Director of External Affairs

DOE Office of Environmental management
April 7, 2014

EM Colleagues,

I am pleased to announce that Candice Trummell has been named EM's Director of External Affairs, effective immediately.

Candice has an extensive background in media relations, intergovernmental affairs and other stakeholder communications, she has been the Acting Director since the departure of Paul Seidler. Previously, Candice has served as the EM Chief of Staff, and in various public relations and intergovernmental affairs positions within EM and at the field office for the former Office of Civilian Radioactive Waste Management. Candice also has private sector experience managing a strategic communications and issue management firm and has served as a local elected official in her capacity as a Nye County Commissioner in Nevada.

Please join me in congratulating Candice on her new position.

Dave Huizenga

**Personnel Announcements to Enhance DOE Health,
Safety, Security and Independent Assessments
Functions**

DOE

March 28, 2014

Dear Colleagues:

On February 12 we announced a new phase of our ongoing effort to improve the effectiveness and efficiency of Departmental operations through the reorganization of the Department's independent oversight and security, safety, health and environmental policy and support operations. As we move forward with implementation of those changes, this message is to inform you of some senior personnel appointments resulting from this reorganization.

As you know, we are designating Chief Security Officers who will report to each of the three Under Secretaries - creating clearer lines of responsibility, authority, and accountability within the Department. We are pleased to report that the following individuals have been named to these positions:

- Michael Lempke will serve as Acting Chief Security Officer for the National Nuclear Security Administration, and Acting Chief of Defense Nuclear Security. Mr. Lempke, the Associate Principal Deputy Administrator of NNSA, brings seasoned leadership to this position. He previously served in a number of senior management positions at Naval Reactors Headquarters and as Field Office Manager for the Naval Reactors Laboratory Field Office. Mr. Lempke has worked closely with Acting NNSA Administrator Bruce Held to streamline and strengthen NNSA security and reporting authorities.
- Brig. Gen. Jimmy McMillian (Ret.) will serve as Chief Security Officer for the Under Secretary for Management and Performance. This is in addition to his role as the Director, Office of Safeguards, Security and Emergency Management within Environmental Management. Prior to joining the Department, Brig. Gen. McMillian was responsible for ensuring the physical security of nuclear assets within the U.S. Air Force, among other leadership responsibilities. He brings extensive security experience to the Department.
- Dennis Miotla will serve as Acting Chief Security Officer for the Under Secretary for Science and Energy, in addition to his role as Chief Operating Officer and acting Principal Deputy Assistant Secretary for the Office of Nuclear Energy. With more than 20 years of experience in senior-level management positions in the Department, both at headquarters and in the field, Mr. Miotla offers integration of security into the achievement of Departmental missions.

Together, the Chief Security Officers will lead a new Security Committee to develop effective and unified security strategies and policies across

the Department. This Committee will be chaired by the Associate Deputy Secretary, a position to which Bruce Held will return upon appointment of a new Under Secretary for Nuclear Security. As Associate Deputy Secretary, Mr. Held will also serve as the Departmental Representative to the Defense Nuclear Facilities Safety Board, to enhance senior-level ongoing interaction with the Board.

We also described our intention to establish a new Office of Independent Enterprise Assessments, reporting directly to us. We are pleased that Glenn Podonsky has agreed to lead this unique new office - serving as an important check-and-balance and meeting our responsibilities as a self-regulating entity. Mr. Podonsky brings to this assignment nearly 30 years of experience in overseeing such independent assessments as well as great insight, experience, and understanding of the Department's organizational challenges.

Finally, as conveyed in our February 12 message, the Department's safety, security, and health policy and support functions are planned to be aligned with the Under Secretary for Management and Performance. Matt Moury will serve as Acting Associate Under Secretary for Environment, Health, Safety and Security to lead this transition. He will be supported by Steve Kirchhoff, Director of the HSS Office of Resource Management.

We thank each of you who may be directly or indirectly affected by this transition and thank you for your continued commitment to achieving the Department's missions effectively, efficiently, and safely.

Sincerely,

Secretary Moniz and Deputy Secretary Poneman

Senate Panel Hearing: DOE FY15 Budget

Senate Appropriations Energy and Water Subcommittee
Hearing Date: April 9, 2014 (2:30pm)

[LINK](#)

Agenda

A review of the President's Fiscal Year 2015 funding request and budget justification for the U.S. Department of Energy

Witness

- The Honorable Ernie Moniz, Ph.D., Secretary, U.S. Department of Energy
- The Honorable Daniel B. Poneman, Deputy Secretary, U.S. Department of Energy

U.S. Seeks Nuclear Waste Research Revival

Scientific American

March 4, 2014

[LINK](#)

A radiation leak has raised questions about the safety of the United States' only deep nuclear-waste repository, and has given fresh voice to scientists calling for more research into underground waste storage.

On 14 February, radioactive plutonium and americium leaked out of the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico, where thousands of drums of contaminated material from the US nuclear-weapons program are stored in salt beds more than half a kilometer below the surface. The health and environmental impacts seem to be minor, but 13 employees have tested positive for low-level contamination. The Department of Energy (DOE) and its contractors are still working on a plan to re-enter the WIPP and find out what caused the leak.

The incident also brings renewed attention to a problem that policy-makers have been avoiding: what to do with a mounting stockpile of spent fuel from commercial reactors, which is currently stored at reactor sites. In 2010, the DOE mothballed plans to develop Yucca Mountain in Nevada, which since 1987 had been designated as the future site of an underground repository (see Nature 473, 266-267; 2011). Researchers at the DOE and universities want to explore a variety of alternatives. But they say that they have been hobbled by small budgets and the Nuclear Waste Policy Act, which prevents the DOE from investigating any specific site apart from Yucca Mountain.

"Basically, all of the old ideas have come back out of the woodwork," says Michael Driscoll, a nuclear engineer at the Massachusetts Institute of Technology in Cambridge. "But the first thing we need is Congress to wrestle with this and revise the Nuclear Waste Policy Act."

For now, researchers are pursuing generic repository science that does not conflict with the law. In one large proposed experiment, DOE scientists wanted to assess whether salt beds at the WIPP could store radioactive waste that is hotter than the material they currently hold. In 2011, the team began developing a \$31-million experiment that would have tested how the salt deforms when it is heated, and how water moves through it.

Other researchers are investigating the concept of dropping cylinders of nuclear waste into 5-kilometer-deep boreholes in hard rock such as granite. Sandia National Laboratories in Albuquerque, New Mexico is leading a consortium of researchers and companies seeking to drill an experimental borehole costing approximately \$25 million. The hot-salt and borehole proposals are now competing for funding within the DOE's relatively small \$15-million annual budget for this kind of research. "Big tests like either of those would completely overwhelm the current budget," says Peter Swift, who heads the DOE's nuclear-waste science program at Sandia.

In Europe, scientists have developed expertise with other types of rock. Finland and France have homed in on proposed underground repositories in granite and shale, respectively. Germany has buried low- and medium-level wastes in underground domes of salt, and it is evaluating the terrain for a controversial high-level waste repository.

International collaboration gives researchers access to the basic science on all of these environments, says Jacques Delay, secretary-general of the Implementing Geological Disposal of Radioactive Waste Technology Platform in Bure, France, a consortium that guides a roughly €10-million (US\$14-million) joint research program under the European Commission. "What is tricky is to make the link between the academic science and our projects," he says.

But basic research can go only so far, because the scientific assessment of repository safety is specific to local geology. After choosing a site, researchers must study the density, porosity and heat conductance of the rock there, and characterize any fractures and groundwater movement. Modeling and experiments help to determine how the rock will respond to the heat generated by the nuclear waste.

The United States spent more than \$15 billion on Yucca Mountain before then-energy secretary Steven Chu pulled the plug, saying that the site was not a "workable option" -- broadly interpreted to mean that it was doomed politically, if not technically. The United States has evaluated few alternatives. The city of Carlsbad, which hosts the WIPP, is politically inclined to expand its nuclear-waste portfolio. But few other communities have shown interest in storing nuclear waste.

Some DOE researchers favor a serious exploration of borehole disposal, in part because no one has tested the idea, which dates back to the 1970s. Swift estimates that just 800 boreholes would take care of the existing US waste stockpile, as well as spent fuel from current reactors until about 2050. There is suitable rock at various depths across the country. "You could spread these things out, and you wouldn't have to put all of your money on one site," says Patrick Brady, a geochemist at Sandia who is part of the lab's borehole consortium.

Drilling constraints might limit these boreholes to less than 50 centimeters in diameter, so spent fuel rods, currently stored in large canisters, would need to be repackaged. However, a hole that size would be perfect for a major source of waste that the DOE is trying to dispose of: 2,000 highly radioactive capsules containing caesium and strontium from the Hanford Site, a decommissioned plutonium-production facility in Washington state. These capsules are 52-56 centimeters long and up to 9 centimeters in diameter, and they contain 38% of Hanford's radioactivity. Swift says that they could all fit into a single borehole.

With research worldwide concentrating on underground repositories, Swift says that it is time to try a new concept: "If we make a borehole, it will be the one that the rest of the world comes and looks at."

Report says Hanford nuclear waste capsules at risk

The Seattle Times

April 3, 2014

[LINK](#)

RICHLAND, Wash. --

Nearly 2,000 capsules containing radioactive waste at the Hanford Nuclear Reservation should be moved, in part because of earthquake

danger, according to a new report by the U.S. Department of Energy's Office of Inspector General.

The 1,936 capsules contain radioactive cesium and strontium and are held in a giant pool of water on the Hanford site, the nation's most polluted nuclear weapons production site.

The report released Wednesday said a severe earthquake could cause a loss of power or water in the Waste Encapsulation and Storage Facility in central Hanford.

The Tri-City Herald (<http://bit.ly/1dQx1Jn>) said the report suggests the capsules should be moved to dry storage as soon as possible.

"We acknowledge the budgetary challenges facing the department and its impact on moving the capsules into dry storage," report author David Sedillo wrote. "However we suggest that the manager (of the) Richland Operations Office expeditiously proceed with its plans to pursue a dry storage alternative ... at the earliest possible time frame."

Steps were taken to reduce the risk of a severe earthquake to the storage pool after the nuclear disaster three years ago in Fukushima, Japan.

The cesium and strontium were recovered from Hanford's underground waste tanks from 1974-85, packed in corrosion-resistant capsules and placed in underwater storage at the Waste Encapsulation and Storage Facility. The waste is left from the past production of plutonium at Hanford for nuclear weapons.

The capsules, which are about 22 inches long, hold material with 106 million curies of radioactivity, or 32 percent of the total radioactivity at Hanford. The 13 feet of water covering them helps cool the capsules and protects workers from radiation.

The capsules were destined for the proposed Yucca Mountain, Nev., national repository, which DOE no longer plans to develop. That could leave the capsules stored at Hanford until 2048, when DOE plans to open a repository at a location yet to be determined.

The storage facility has been operating for almost 40 years and the concrete in the cells of its underwater pool has begun to deteriorate from radiation exposure.

"Weakened concrete in the walls of the pool increases the risk that a beyond-design earthquake would breach the walls, resulting in the loss of fluid, and thus, loss of shielding for the capsules," the report said.

However, the report noted that an earthquake or other disaster more severe than the storage facility was designed for is "extremely improbable."

After the Fukushima disaster, private contractor CH2M Hill Plateau Remediation Co. rearranged about 800 of the underwater capsules to better distribute their heat.

A loss of water in the pool could cause the capsules to corrode or be breached.

CH2M Hill issued a request for information to engineering firms in August to ascertain the cost and feasibility of dry storage.

If the Energy Department can find the money to move the capsules to dry storage, it would save money in the long run, the report said. The move would cost an estimated \$83 million to \$136 million. But then the storage cost would drop to \$1 million a year, compared to the current underwater storage cost of \$7.2 million annually.

The sprawling Hanford site is near Richland.

Federal goal is more Hanford land access

Tri-City Herald
March 27, 2014

[LINK](#)

The Department of Energy wants to provide additional access to Hanford land as it is cleaned up, a top official said Thursday.

Dave Huizenga, senior adviser for DOE's Office of Environmental Management, said the department has been receiving input from the tribes, Tri-Cities organizations and the general public, and will consider that input.

"The overall thrust is to try to turn some of that land back over to the community for reuse," he said.

Huizenga made the remarks at a Congressional Nuclear Cleanup Caucus briefing organized by Rep. Doc Hastings.

Discussions have begun in the Tri-Cities on future land use as DOE expects to complete environmental cleanup on much of the 220 square miles of Hanford land near the Columbia River in 2015.

The U.S. Fish and Wildlife Service is under a standing directive from the White House and office of the Secretary of the Interior to discuss the possibility of adding more Hanford land to the Hanford Reach National Monument, said Charlie Stenvall, project leader for the Mid-Columbia River National Wildlife Refuge Complex.

But at the same time, the Tri-City Development Council and the Tri-Cities Visitor & Convention Bureau have worked with a consultant and held two series of public meetings to develop a vision of how the Tri-City area community would like the land used. They are proposing outdoor recreation such as hiking, biking and camping.

The local agencies are adamant that the community have a say in the future of Hanford land, rather than the matter being decided among federal officials.

Stenvall said Fish and Wildlife is following directions stemming from a memo from President Clinton when he created the monument in 2000. It

directed the energy secretary to consult with the interior secretary on the possibility of adding more land to the monument as Hanford land was released from environmental cleanup.

Further instructions from the secretary of the interior directed Fish and Wildlife to work with DOE on how best to permanently protect the natural and historic resources in the portions of central Hanford that are not included in the monument.

The monument includes the security zone around central Hanford. In central Hanford, weapons plutonium was produced in certain areas, but most of those areas are separated by miles of shrub steppe habitat.

Fish and Wildlife and DOE officials are meeting at the regional and national level to discuss meeting their obligations to consider the future of Hanford land. But any expansion of the monument would require either an act of Congress or a presidential executive order, Stenvall said.

Fish and Wildlife could look at options, analyze them and make recommendations, but not decisions, he said. And it is too early in the process for Fish and Wildlife to know what natural resources are worth conserving at Hanford and how they should be preserved, he added.

However, Fish and Wildlife would only look at habitat, not historic sites such as B Reactor, he said.

TRIDEC and the Visitor & Convention Bureau have been concerned that adding Fish and Wildlife to plans could derail years-long efforts that they hope will conclude this year with congressional approval of a new Manhattan Project National Historical Park. B Reactor and other historic areas of Hanford could be included.

Fish and Wildlife was an early proponent of National Park Service involvement to preserve historic structures at Hanford, and as sister agencies in the Department of Interior, the two agencies work well together, Stenvall said.

TRIDEC has argued that the Park Service is focused on public access, while Fish and Wildlife is focused first on preserving habitat.

Stenvall countered that all of the Mid-Columbia refuges allow public access.

"It's not an either-or situation as evidenced by the refuges we have," he said.

Fish and Wildlife is required by the National Wildlife Refuge Improvement Act of 1997 to look at "wildlife-dependent recreation" on refuge land, which could include nature trails for hiking and wildlife spotting.

About 34 percent of the 196,003 acres of the Hanford Reach National Monument, which is part of the refuge system, is open to the public. But TRIDEC has argued that is too little and is concerned that if more Hanford land is added to the monument, the public would be excluded.

Much of the closures on the monument are beyond Fish and Wildlife

control, according to the agency.

The McGee Ranch between Highway 24 and the Columbia River, the Hanford dunes, the islands in the Columbia River and a quarter-mile strip along the river all remain under DOE management rather than Fish and Wildlife management, Stenvall said. That accounts for about 30,000 acres.

Fish and Wildlife manages the Saddle Mountain National Wildlife Refuge area, but it is closed to the public as a DOE safety buffer for the K Basins across the river. Once that land is released from cleanup, another 28,321 acres should be opened to the public, opening about half the monument to outdoor recreation.

The Arid Lands Ecology Reserve, which includes Rattlesnake Mountain, remains closed to the public, in part to preserve its ecological and cultural resources. The mountain has been designated a traditional cultural property and has long been considered sacred by the tribes.

Two Mid-Columbia outdoor groups already have told congressional leaders that they support adding additional Hanford lands that are not contaminated to the national monument.

Ridges to Rivers Open Space Network said in a letter that to assure proper management for the future, additional lands should be put under Fish and Wildlife management and then opened for public use as appropriate.

The Lower Columbia Basin Audubon Society also has told Washington's U.S. senators in a letter that it is time to move administration of Hanford lands where cleanup has been completed from DOE to the Department of Interior. That letter also discusses expanding the monument.

When the monument was created in 2000, a committee was created that included Tri-City area residents to advise Fish and Wildlife. After two years of discussion, it came up with a plan that recommended increased access to monument lands and plans for campgrounds, boat launches and hiking trails.

But although the community was consulted, most of those plans have not materialized, said Kris Watkins, Tri-Cities Visitor & Convention Bureau president. The advisory committee plan is not that much different than the community vision her agency and TRIDEC have developed.

Fish and Wildlife was required to prepare a long-range management plan for the monument, which was completed in 2008. But since then tight budgets and limited staff have stalled planned improvements.

Donations have been one possibility considered by agencies wanting to add trails, campgrounds and nonmotorized boat launches on Hanford land as it is released from cleanup.

It is common for Fish and Wildlife to form partnerships with other organizations to make improvements and that is possible on monument lands, Stenvall said.

But Watkins said thin federal budgets can hamper public-private partnerships because federal agencies do not have the staff time to oversee projects or work with volunteers.

Gov. Rick Perry encourages support of high-level radioactive waste storage in Texas

American-Statesman

March 31, 2014

[LINK](#)

Gov. Rick Perry has thrown his support behind an effort to make Texas the repository for highly radioactive waste from around the nation.

In a March 28 letter to Lt. Gov. David Dewhurst and Speaker Joe Straus, he unveiled a state environmental agency report -- ordered by Perry -- that finds Texas is a suitable spot for the waste, typically associated with spent fuel rods at nuclear power plants.

In the letter, Perry couches potential Texas action as a response to federal inaction.

"The citizens of Texas -- and every other state currently storing radioactive waste -- have been betrayed by their federal government," he writes, because a federal solution to long-term storage of the waste does not exist despite billions of dollars paid by utilities to pay for a site.

That solution was meant to be Yucca Mountain, the Nevada site once designated to be home to millions of pounds of socked-away highly radioactive waste. But Yucca is no longer on the table, following billions of dollars in studies and years of political bickering.

Perry is the second high-ranking state official to engage recently in the high-level radioactive waste issue.

In January, Straus ordered lawmakers to "determine the potential economic impact of permitting a facility in Texas."

Spent nuclear fuel rods are currently stored and monitored on the sites of nuclear power plants across the nation.

The Yucca experience suggests long-term permanent disposal of such material faces long odds. More likely, experts say, is the construction of an interim storage facility, where nuclear waste is entombed in dry casks on a concrete slab for as long as a century.

Permitting such a facility, which would handle waste in a similar fashion to the nuclear reactor sites around the country, could take less than two years, according to Dale Klein, former chairman of the U.S. Nuclear Regulatory Commission and associate director at the University of Texas Energy Institute.

The leading contenders for a disposal site or a storage facility in Texas are in Andrews County, the site of a low-level radioactive-waste facility, about 75 miles northwest of Odessa, and nearby Loving County, where

county commissioners have passed a resolution to accept interim storage of spent nuclear fuel.

In November 2013, a federal court determined the U.S. government has "no credible plan" to dispose of the high-level waste. That ruling came after the federal government collected billions of dollars from utilities over decades to pay for the Yucca site.

"The governor has a point: We've been paying into this fund and they haven't found a solution," said Cyrus Reed, conservation director of the Lone Star chapter of the Sierra Club, which has been tangled in litigation over the low-level radioactive waste site.

But Texas needn't be the state to stick its neck out for the waste, he cautioned: "Someone will profit, and who will be left holding the radioactive bag once those profits are made?"

The Texas Commission on Environmental Quality report cited by Perry notes that "Finding a site that has local and state support would greatly enhance the chance of a private centralized interim storage site being successfully sited and constructed."

Such a facility in Texas "is not only feasible but could be highly successful," the report says.

"We are pleased with the movement by the state to address this issue," said Bill Jones, co-founder of the Austin-based company Advanced Fuel Cycle Initiative, which has been working to bring a high-level waste facility to Texas.

The U.S. Department of Energy did not return a call for comment.

Citing potential competition from New Mexico to take the material, Perry writes in the March letter that "I believe it is time to act."

Where Would YOU Put Our Nuclear Waste?

Forbes

March 31, 2014

[LINK](#)

On Valentine's Day, a small puff of radioactivity exited the only deep geologic repository for nuclear waste operating in the world, the Waste Isolation Pilot Project near Carlsbad, New Mexico. A slab of rock most likely fell from the ceiling, smashing some drums, and getting a small spot on WIPPs' 15-year spotless record.

Immediately, cries of the ceiling is falling, the ceiling is falling progressed promptly to we need to find a new place, even though there will be no impact to anyone's health or the environment from this event. Articles appeared quickly offering new places to put this stuff, like "How about shale? We got plenty of that!" (Bloomberg).

But before we throw the baby out with the bathwater, and start re-inventing the wheel, let's review what options for nuclear waste disposal have been proposed over the last 70 years. Then, I invite readers'

thoughts about what you would do with, or where you would choose to put, this material. I would appreciate only a single comment from each person for the first 24 hours so as to lay out the field of possibilities first before we get into the more animated discussion that often drowns out all but the thickest-skinned among us.

Nuclear waste really begins with WWII and the making of the Bomb. The production and reprocessing of fuel from weapons reactors to make Pu resulted in the first significant amount of nuclear waste beginning in 1944. We had no idea what this stuff was, let alone anything about environmental science, so we built million-gallon tanks at Hanford in WA State, among other places, to store this material while we won the war. Then we ramped up weapons production to win the Cold War.

With the advent of commercial power reactors in the 1950s, and the increasing frenzy of weapons production, it became obvious that we needed a real strategy for long-term disposition of nuclear waste. The federal government commissioned the National Academy of Sciences to come up with the best strategy and, in 1957, they reported that deep (half-a-mile or so) geologic disposal was best, and that massive bedded salt was the best rock type (National Academies Press). This led directly to WIPP. A splinter strategy in the 1970s, involving retrievability of spent nuclear fuel from the depths, then led to Yucca Mountain.

This is where we are today. Yucca Mountain is in stasis, and we're all atwitter about the blip of a first incident at WIPP. But in the 1970s, there was a push to investigate alternatives to geologic disposal since it was becoming obvious we wouldn't soon agree on any location. Significant time was spent on evaluating these ideas (Mark Holt, Congressional Research Service), and the most reasonable included:

- Shoot it into the Sun (did I say reasonable?)
- Transmute it by bombarding it with high energy particles (alchemy with an accelerator)
- Sail it out to a deep ocean trench and drop it in (Exxon Valdez 21st Century)
- Drill deep (miles) boreholes in a thick Ice Sheet and drop in everyone's canisters (Exxon Valdez on Ice)
- Drill deep (miles) boreholes in each State that has waste and drop in the canisters (distributed liability)

There were others, but these were seriously considered, and some of them still are.

Shoot it into the Sun. While theoretically correct (the Sun is a huge nuclear reactor that would completely consume this waste) the extreme cost, and risks of an accident, speaks for itself. Plus, the giggle factor was just too much to get over. But in all fairness, we had recently landed on the Moon so space was in our thoughts and, originally being a planetary geologist, I thought this idea was a gas.

Transmutation. Bombarding the waste, or individual components of it, in

nuclear reactors or linear accelerators, can transmute radioactive elements into less hazardous and non-radioactive elements. Take two of the bad boys, technetium-99 and iodine-129, both of which dissolve easily and can move with the groundwater, and represent a major dose early in most performance assessment models. Each isotope absorbs a neutron if you bombard them. Tc-99 becomes Tc-100, which quickly decays into stable ruthenium, and I-129 transforms into stable xenon. You might imagine how very expensive and time consuming this process would be, even if we had enough accelerators and reactors for this purpose.

Sail it out to a deep ocean trench and drop it in. This is not a bad idea geologically - cold impermeable, oxygen-free, self-sealing ooze that will eventually get dragged down into the trench formed between two colliding crustal plates. But trenches are in international waters, and if you thought getting 50 States to agree on a single solution was hard, just think 193 sovereign nations.

Ice Sheets. Given global warming, not sure this is cool. The Greenland sheet no longer suffices in terms of stability or ice depth. The Arctic is too thin as it sits mostly over water. West Antarctica is also too thin and covers a huge archipelago that may soon emerge from below to above sea level. Only East Antarctica is thick enough and will be for millennia. Again, international unclaimed lands that are extremely dangerous and expensive to get to.

Deep borehole disposal. Bore miles deep into the crust and put in many packages. This is not a bad idea at all, but is really only for commercial waste, since the boreholes would be drilled in each State that has the waste itself, few populations would accept other States' waste, and no one would accept the weapons waste (Sandia National Labs; Bates, et. al. 2014. Energy Policy (in press, <http://dx.doi.org/10.1016/j.enpol.2014.03.003i>). Although some technology development is needed (we've only drilled really deep holes to diameters not yet 12-inches), it appears doable. Assuming some favorable breaks, the cost would be in the ballpark of proposed traditional geologic repositories, and may even get down to that of just expanding WIPP. But you'd then have over thirty nuclear waste sites spread out over the entire country. Would that be good? Would it be bad? More equitable?

But it is most likely that we will stick with moderately deep (half-a-mile) geologic disposal, in one or more places, e.g., WIPP and Yucca Mt. So what are the characteristics of an ideal deep geologic nuclear waste disposal site? (New Mexico Academy of Science, Conca et al p.13-23)

- a simple hydrogeology (we know how the water moves here),
- a simple geologic history (we know what happened here),
- a tectonically interpretable area (we know what's going on here),
- isolation robustly assured for all types of wastes (we don't want the form to matter),
- minimal reliance on engineered barriers to avoid long time extrapolation

of models for certain types of performance (we don't know how long we can make anything last),

- performance that is independent of the canister, i.e., canister and container requirements are only for transportation, handling and the first several hundred years of peak temperature after emplacement in a repository (we don't know how strong we can make something when put up against the Earth), and

- a geographic region that has an existing and sufficient sociopolitical and economic infrastructure that can carry out operations without proximity to a potentially rapidly growing metropolis (we don't want a lot of people around it but need enough to make it happen).

Deep crustal rocks meet these criteria, but two more shallow rock types that fit these characteristics are argillaceous rocks (claystones and shales) and bedded salts (Dave Savage). Many studies have focused on argillaceous sites, particularly in Canada and Europe with some strong technical arguments for their suitability in those that are sufficiently massive and non-clastic. Similarly for salt deposits. Although many salt deposits exist throughout the world, many are not sufficiently massive, have too many clastic interbeds, are tectonically affected, or are near population centers. Salt domes and interbedded salts are less optimal than massive bedded formations from a hydrologic standpoint, particularly within the United States where diapiric movement (doming) can exceed 1 mm/yr, and spline fractures can act as hydraulic conduits. Still, there are many viable salt deposits globally that meet these criteria, the best being the Permian Salado Formation, WIPP's host rock.

So... what choice do we have?

