

Will Fracking Cause our next Nuclear Disaster?

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The idea of storing radioactive nuclear waste inside a hollowed-out salt cavern might look good on paper. The concept is to carve out the insides of the caverns, deep underground, then carefully move in the waste. Over time, the logic goes, the salt will move in and insulate the containers for thousands of generations.

"The whole game is to engineer something that can contain those contaminants on the order of tens of thousands of years," Tim Judson, the executive director of the [Nuclear Information Resource Service](#) (NIRS), told Truthout. NIRS is intended to be a national information and networking center for citizens and environmental activists concerned about nuclear power, radioactive waste, radiation and sustainable energy issues, according to Judson.

Salt-cavern storage was the plan for the Waste Isolation Pilot Project (WIPP), the world's third-deepest geological repository, constructed and licensed to permanently dispose of radioactive waste for 10,000 years. The repository sits approximately 26 miles east of the town of Carlsbad in southeastern New Mexico.

Since shipments began in 1999, more than 80,000 cubic meters and 11,000 shipments of waste have been transferred to WIPP.

But at the moment, there are several ongoing critical problems at the site, which has been [closed](#) and unable to accept shipments of radioactive waste ever since a [fire](#) and radiation release in February. Dozens of barrels of radioactive waste from Los Alamos National Lab, like the one that caused the radiation leak, now pose an "[imminent](#)" or "[substantial](#)" threat to public health and the environment.

Yet, these problems could pale in comparison to what might happen at the site if an earthquake were to strike, or if the protective salt layer were compromised by nearby drilling for oil and gas, and in particular, hydraulic fracturing, commonly known as fracking.

Fracking is a technique used in obtaining gas and petroleum, in which water is mixed with sand and toxic chemicals, and the mixture is injected at extremely high pressure into a wellbore to create small fractures.

Thus, one would logically deduce that fracking should never be done anywhere near WIPP. However, it is being done there, and experts expect it to increase.

"In the last three years, a dozen fracking wells have become operational within five miles of the site [WIPP]," Don Hancock, the director of the Nuclear Waste Safety Program at

Southwest Research and Information Center, told Truthout.

Given that it is already [well known](#) that fracking causes earthquakes, it is clear that the nuclear waste storage site is now in danger of having its structural integrity compromised.

“These are the major concerns,” Hancock warned. “There is clearly a possibility that the deep fracking can affect the stability, but even more likely is fracking liquids nearing or entering the waste beds – which would be a very bad thing.”

“They Are Drilling All Around It”

Truthout spoke with a state of New Mexico employee who is intimately familiar with the permitting and drilling processes related to WIPP. The employee spoke on condition of strict anonymity, due to a fear of reprisals from the pro-drilling administration of radical right-wing Tea Party [Governor Susana Martinez](#).

“There is so much drilling coming online down there now,” the employee explained. “They are going back into existing fields and drilling horizontally, and the [WIPP site](#) is located right in the middle of all these fields, so they are drilling all around it.”

The source said that the oil and gas companies who are drilling and fracking near WIPP “have permission to go under the [WIPP] boundary to target the reservoirs there, so it appears as though most of the wells are horizontal, and that is a concern.”

According to the employee, “The fracking fluids they are injecting are very unstable, and if it continues like this there could be big problems.... There was a 5.2 [earthquake] in West Texas from fracking, and that’s a big concern given the sensitivity of the WIPP site and what the possible consequences could be.”

The WIPP site was chosen in the mid-1970s because there was no oil or gas found within several miles of it. The thought at the time was that the area was outside the active oil and gas production area.

“One of the original criteria for siting is there shouldn’t even be a borehole let alone active drilling within two miles of the site,” Hancock explained. “But that ended up being reduced to a mile.”

As time went on, oil and gas drilling started getting closer and closer to the site, so it started being something people paid attention to.

“We became concerned, because inadvertently drilling through nuclear waste containers on your way to find gas has generally had been thought of being a bad idea,” Hancock added sarcastically.

Since the federal government “doesn’t really control fracking” according to Hancock – and since most of the land around the site is controlled by the Bureau of Land Management and the state of New Mexico, whose governor is extremely pro-oil and gas and anti-environment – the area has been allowed to be treated just like any other in New Mexico, when it comes to being exploited for oil and gas.

“Those government agencies, federal and state, none of them have fracking restrictions,

because the goal is to maximize mineral production because that is the law and it generates income for the feds and state from the royalties,” Hancock added.

The 16-square-mile WIPP site is surrounded by more than 100 operating oil and natural gas wells within a mile of the boundary. There are at least 350 wells within three miles of the boundary, and the number is growing.

In addition to the eventuality of fracking causing earthquakes that could damage the natural salt container around the waste, Hancock also warned, “There is some likelihood of fracking fluids penetrating areas at or near waste emplacement.”

Judson is also concerned about this possibility, because water contamination that comes with fracking creates groundwater seepage that can compromise the integrity of the site, by allowing water into the area where the nuclear waste containers are stored.

“There are also stable rock formations that evolved over millennia, and you are disturbing those rocks and that causes geologic instability,” he added.

Judson also expressed concern about a highly pressurized brine reservoir directly beneath the site, which he says presents “lots of possibilities for problems.”

“The brine is a big pool of very salty water underneath the site,” he explained.

“The repository itself is a salt repository. The concept is you hollow out salt caverns in the earth and move in the waste, and over time the salt moves in and insulates the containers for a long time. But under the site is this salt pond, and if disturbed, [it] can cause wastewater to leak up into the site and corrode waste canisters, and cause waste to migrate if it leaks, and compromise the integrity of the entire site.”

Given that the principle behind WIPP is that it is built so that burying the waste there means the site will resist the dispersal of nuclear waste for thousands of years, Judson warned, “Anything allowing water migration or canister corrosion can compromise the stability of the site itself.”

“A Massive External Release”

State and federal authorities who’ve granted permissions for the oil and gas drilling, along with fracking close to WIPP, say they don’t believe any of these activities will be a problem, because the oil and gas they are going for are several thousand feet below WIPP, which is just over 2,000 feet deep at its deepest point.

According to Hancock, however, this argument is weak.

“Fracking causes earthquakes and other kinds of fracturing, and it’s not like fracking is an exact engineering process. So if you’re fracking at eight or nine thousand feet, this doesn’t mean you can’t have problems at two thousand one hundred feet, or close enough to WIPP to cause difficulties at the level where the waste is,”

he said.

Hancock believes that fracking near the site could cause a release from the underground containment area itself, which could have immediate and long-term effects. This is what we witnessed in February, by way of a small radiation release that shut the site down for nearly four months, and will likely keep it closed for several months to come.

Hancock issued a dire warning about the consequences of fracking near the site: “It [fracking] is potentially a shutting-down-the-facility kind of thing, and worst case scenario, that could cause catastrophic injuries to workers and a massive external [radiation] release which would be an extremely serious problem.”

A Growing Number of Problems

Due to the ongoing problems at WIPP, the federal government’s Department of Energy (DOE) [recently notified](#) the state of New Mexico that it would be unable to meet a June 30 deadline to remove 3,706 cubic meters of nuclear waste from the mesa at Los Alamos National Lab where it is stored.

“As we work to assess the conditions of the transuranic waste program at the lab, we have decided to halt further shipments until we can reassure the public that it is safe to do so,” DOE Deputy Under Secretary David Klaus said.

As a result of the February radiation leak and fire within the facility, WIPP officials at the site discounted any effect of the current leak on human health, saying no radiation escaped to the surface. But they did not speak about the extent of the problem or how it eventually would be cleaned up.

“Officials at WIPP continue to monitor the situation,” DOE spokeswoman Deb Gill[said](#) at the time of the leak. “We are emphasizing there is no threat to human health and the environment.”


Contradicting Gill’s assurances, [plutonium readings were detected](#) at a DOE field office half a mile from the site. Joe Franco, the manager of the DOE field office, confirmed the readings.

Nothing will change unless the left and progressives take seriously the subjective underpinnings of oppression in the United States.

If breathed or swallowed, plutonium generally stays in the body for decades and continues to expose the surrounding tissues to radiation.

The WIPP site remains shut down as the DOE and other groups investigate the cause of the release. There is no date set for when the site will reopen, which means areas like Los Alamos will continue to have to store radioactive waste on site.

Wildfires in 2011 burned precariously close to the radioactive waste site at Los Alamos, where the waste is stored aboveground in barrels.

 Several times wildfires have come close to the nuclear waste at Los Alamos, nearly causing what would be a national disaster. (Photo: Erika Blumenfeld)

Given the ongoing severe drought in New Mexico and most of the rest of the western US, this wildfire season is expected to set records once again.

Meanwhile, the domino effect from WIPP's mounting problems is evident, as nuclear power plants across the US are already [making preparations](#) for long-term storage of nuclear waste at their sites, due in part to the ongoing crisis at WIPP.

Further complicating the situation at WIPP is the fact that it is located in Eddy County, where there were [592 oil and gas-related spills](#) (63 percent of all the spills in New Mexico) in 2013.

During the first three months of 2014 there were 127 spills in Eddy County, which constituted 91 percent of the spills in the state. Not one enforcement action [was referred](#) to state Attorney General Tannis Fox, whose responsibility would have been to enforce state protocols against the spiller. Hence, by not referring actions to the attorney general, the state need not hold accountable the oil and gas companies responsible for spills. In fact, there has not been one enforcement action referred to the state attorney general during the entire time Governor Martinez has been in office.

As of May 2014, more than 3,600 reported violations of the New Mexico oil and gas drilling regulations had not been acted on. Several of these occurred in the vicinity of WIPP.

Despite these disconcerting statistics, the federal government has [opted not to inspect](#) high-risk wells and drilling in the area around WIPP.

Hancock pointed to yet another potentially catastrophic situation related to WIPP. "Eddy County has the highest highway accident rate in the state because of the heavy trucks with the fracking and oil and gas drilling, so we expect accidents with fracking and drilling vehicles and WIPP trucks, assuming the site gets reopened," he warned, as the trucks carrying large containers of radioactive waste en route to WIPP travel alongside those of the oil and gas companies. "Thus, traffic accidents could cause releases on the surface."

Thousands of Generations

Hancock, who has been monitoring WIPP since 1975 and is intimately familiar with the technical policy, regulatory and legal issues related to the site, reiterated what should be an obvious point: "Given that some of the wastes at WIPP are dangerous for thousands of generations, it is not an ideal place for storing wastes," he said. "That being the case, we can't predict what will happen with fracking ramifications that far into the future. The likelihood that the stability of the site will be disrupted is clear."

Judson was blunt about his assessment of what have been the formative years of the WIPP project.

"The issues of management and mismanagement just 15 years into the project speaks to the difficulties the government faces in managing nuclear waste," he said. "Given there is a renewed push to reopen Yucca Mountain, which has many of the same problems of WIPP, it raises a real question about the quality of management within DOE for the nuclear waste program."

WIPP contains plutonium and very toxic radio nuclides that could, if the integrity of the site is comprised as a result of the increasing fracking activity nearby, leak into New Mexico's

groundwater and contaminate it for hundreds of thousands of years to come.

Judson asked why there is not a mandatory 100-mile boundary around the site, and his concluding comment remains what is perhaps the most important unanswered question of all: "Isolating nuclear waste is a national priority, but how much of a priority is it if they are going to allow these kinds of activities near a site like this?"

Dahr Jamail, a Truthout staff reporter, is the author of The Will to Resist: Soldiers Who Refuse to Fight in Iraq and Afghanistan, (Haymarket Books, 2009), and Beyond the Green Zone: Dispatches From an Unembedded Journalist in Occupied Iraq, (Haymarket Books, 2007). Jamail reported from Iraq for more than a year, as well as from Lebanon, Syria, Jordan and Turkey over the last ten years, and has won the Martha Gellhorn Award for Investigative Journalism, among other awards.

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