Holtec-CISFEISCEm Resource

From: Deborah Reade <reade@nets.com>
Sent: Monday, July 30, 2018 2:59 PM
To: Holtec-CISFEIS Resource
Subject: [External_Sender] CARD's comments on Docket ID NRC-2018-0052; Holtec CIS Facility in Lea County, New Mexico
Attachments: CARD_NRCcommentsHOLTEC_7-30.pdf; 2018-updatev3-SE-ThreatsMap_13x19.pdf

Attached, please find our comments on the Holtec CIS Facility in Lea County New Mexico. We have also attached the *Southeast New Mexico Threats Map* which is referred to in our comments and should be included in our submission.

Sincerely,
Deborah Reade
For CARD

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July 30, 2018

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U.S. Nuclear Regulatory Commission
Washington, DC 20555– 0001

Submitted online at:
Holtec-CISFEIS@nrc.gov

RE: Docket ID NRC–2018–0052; Holtec International's HI–STORE CIS Facility for Spent Nuclear Fuel, Lea County, New Mexico

To Whom it may concern:

The federal government, the NRC, the commercial power reactors and the American public all have the same problem. High-level waste (HLW) in the form of spent nuclear fuel (SNF) is building up in reactors around the country and around the world. The government promised the reactors that it would solve this problem by finding a safe place to dispose this waste. The deadline for this has long since passed. Everyone except the public sees consolidated interim storage (CIS) as a nice solution which would allow this problem to be put off on future generations. But moving ahead without a safe solution for this waste is how we got here in the first place. Unfortunately, CIS is *not* the answer; it would simply create even a more enormous problem and would waste both time and money that should be spent in making storage at or near reactors safe and secure now, while we actively pursue a true solution for our nuclear waste problem.

In fact, it's hard to take NRC's acceptance of licensing applications for CIS facilities seriously since there are so many unresolved problems, unsupported assumptions and so many promises that everything will be worked out in the future, involved at every level of this project. Both the applicant and NRC seem to thrive on magical thinking since there is no science-based or technically based proof that any of these problems—many of which are major—can or will be solved anytime soon. The applicants seem focused on profits and NRC seems focused on sweeping an inconvenient problem under the rug and everyone is happy to ignore any inconvenient facts. "Don't worry; be happy" seems to be the name of the game. What is going on here is *Nuclear Safety Lite.*

CARD wants to make it clear that we and our members—especially our members in southeastern New Mexico—**do not consent to building a CIS facility in our state.**

SCOPING HEARINGS

It is way too premature to have had scoping hearings as indeed it was way to premature for NRC to accept Holtec's application. Too many things are years from being resolved. And the scoping hearing process was almost completely defective. NRC seems content to ignore facility transportation—yet this is the phase of the project that affects most people as it will impact a majority of states and will probably go through at least 20 major cities. We have learned from the Waste Isolation Pilot Plant (WIPP) transportation studies that it is the transportation phase that creates most of the negative health effects *of the entire project* during normal operations. Though WIPP waste is transported by truck and Holtec transportation would primarily be by rail, studies to see what and where effects would occur along the routes are critical. Most WIPP effects occur at rest and truck stops where workers can, over time, receive many times the dose a nuclear worker is allowed. The same thing could occur at rail yards and stops. Risks from accidents would also follow along the routes thus putting many millions of Americans at risk. Discrimination in the pattern of these risks will be discussed later.

But NRC has declined to provide scoping hearings along routes, or even to designate the routes, trying to limit discussion to the facility itself and ignore facility transportation completely. Perhaps this is because the transportation is so dangerous and NRC seems to want to ignore anything that will make clear how reckless and irresponsible this entire project is. NRC should have at least as many scoping hearings, spread out along the routes, as were provided for the Yucca Mountain hearings. Notice and information would need to be provided throughout the country and in a variety of languages so that Low English Proficiency (LEP) persons can participate equally.

So far NRC has provided only a pitifully few hearings in New Mexico (and one in Maryland) and has provided a similarly pitiful range of materials in Spanish for LEP Spanish speakers along with no materials at all in any native languages when hearings were held in Gallup. This despite New Mexico being a state where 35.7% of the population speaks a language other than English in the home. This complete lack of understanding of the communities where the scoping hearings were held was made worse when one of the commenters who was speaking in Spanish was cut off prematurely by the moderator who approached him in a threatening manner.

We've been through this before in southeast New Mexico, 20 years ago when the local environment department similarly shut up a Spanish speaking member of the public during the Triassic Park Hazardous Waste Dump hearings. This and other discriminatory actions resulted in the filing of a Title VI complaint and an investigation of discrimination by the EPA. So far the NRC looks to be going along in exactly the same way and this is not acceptable. It is sad that NRC seems to be stuck back 20 years ago in their understanding of equality and inclusion. But then, perhaps the point is to keep as many people from participating as possible. CARD believes that the entire scoping process needs to be extended both in time and location with many more scoping hearings, adequate translation of materials, and a truly inclusive process. So far, like the project itself, the hearing process has been both discriminatory and cheap.

TRANSPORTATION

NRC seems to be following several unsupported assumptions in its approach to the safety of facility transportation. First, they assume there will be no through-wall cracks in the thin-walled canisters. Second, they assume there will be no transportation accidents with canister leaks. Neither of these is a conservative or prudent assumption.

Canisters: It is amazing to CARD that NRC even allows the use of thin-walled, welded canisters that can't be fully inspected or repaired if found to be damaged or leaking. Evidence has already shown that through-wall cracks are possible. In at least one instance a crack was found to have started in a two year old canister and it has been predicted that such a crack could become a through-wall crack in as few as 16 years. With the huge radioactive load inside each one of these canisters, a breach could wipe out large parts of Chicago or Kansas City or Albuquerque or all of Hobbs or Roswell. With materials this dangerous, a conservative approach is required, yet NRC is rushing forward in a reckless way ignoring the science and following what they want things to be—the very definition of magical thinking.

And what is Holtec's plan if a canister does arrive measurably leaking? It is to send it back, even though this is actually not allowed. To send a leaking canister out on the road seems almost criminal and certainly irresponsible so this is really not an answer. Holtec has no real plan of what to do when a canister arrives leaking. They don't plan to build a hotcell and create procedures to deal with repairs. Surely the lack of any viable plan for dealing with a leaking canister indicates that their application is still incomplete.

Perfect performance: And to assume there will never be an accident with a breach is also magical thinking. With 10,000 canisters and twenty or forty years of shipping, that's not credible. The project could even extend to more than 100 years. Train accident statistics alone show that horrendously powerful accidents with fires can occur. The transportation containers, though robust, have not been subjected to a crush test. There are also many chemicals today that are routinely transported on highways and by rail, that could result in a much hotter fire than the casks have been shown to withstand.

This assumption of perfect performance includes the assumption that there will never be any human error—ever—in the construction, packing, loading, and transporting of both the welded canisters and the transportation canisters. This is a major defect in thinking—particularly since mistakes have already occurred. The WIPP project had an explosion and release 15 years after opening—just as CARD predicted. Human error was almost completely ignored in that risk assessment yet gross human error on many levels was exactly what caused the debacle. That release was relatively small. Making such a gross error in a HLW transportation risk assessment for Holtec could result in the disability and death of hundreds of thousands.

A proper level of risk from human error must be included in any risk assessment. Because Holtec has already been shown to have created and used a defective basket shim design without receiving approval for its use from the NRC, an especially high human error risk factor must be added to any risk assessment for their facilities and their canisters. Although this mistake was observed in four canisters, many other canisters are using the same design which could mean many other canisters could have been shipped while flawed. The assumption of perfect performance is already a false assumption.

Railway transportation: Holtec's boosters give many reasons why the huge weight of the canisters is not a problem for railway transportation. However, again, this is wishful thinking. May of our railbeds are in such poor condition already that trains must proceed extremely slowly. This problem of rail infrastructure has been known for years. A comprehensive study of the condition of the railbeds, trestles, bridges etc. must be done and must include a cost estimate of the price of repairing and reconstructing this infrastructure to make it able to support shipment of 10,000 casks. Who will pay for this upgrade must also be described. Will it be left to the railroads? To the states? Construction of the facility itself should not start until all the transportation infrastructure is in place. Though HLW transportation has

occurred in the past, this will take place on a much larger and more frequent level. Will there need to be dedicated rail cars and other items as they become irradiated from multiple shipments? All this must be included.

Costs: And who will pay for the transportation? Holtec says DOE will pay for it but it is not allowed to pay for transportation to a CIS when there is no permanent disposal facility. Lack of real financial information here also makes the application incomplete—yet another reason the scoping hearings are premature.

STORAGE

Site location: Really, Holtec couldn't have picked a worse place for this CIS. This is the most important oil and gas producing basin in the world. More drilling is going on in Southeast New Mexico now than at any point in time. This oil and gas production is a primary economic support of the state through taxes and royalties. Agriculture, ranching and tourism also bring in more than $605,000,000 in income. A HLW release into the air, water or soil could have catastrophic repercussions on these industries.

Besides the danger to oil and gas development, that development itself has also affected the geology of the area. The land is heaving and sinking throughout the Permian Basin (where Holtec is located) with major sinkholes in several places including one nearby that threatens a road and structures. This is the result of older oil and gas development. Newer development adds fracking to brine injection and both are causing an increase in man-made seismic events. Because of the enormous number of wells in the area (see *Southeast New Mexico Threats Map*, attached). this is an increasing problem. There needs to be more studies of seismic events of different kinds and how they will affect un-cracked as well as partially and through-wall cracked canisters. How they will affect the complete Vertical Ventilated Modules (VVM) is also important to know. And an increase in frequency and strength of these events must be assumed as they are already following that pattern. Incorporating these geological events into a study of the suitability of the site and extrapolating into the future for increased fracking and seismic events must be modeled.

In addition, this is one of the largest karst areas in the world which must also be thoroughly explored. Years of exploratory drilling and study went into the WIPP site EISs and no less should be done here. Karst areas and areas with high resource development like southeastern New Mexico are really totally unsuitable for a waste storage or disposal facility. This alone should make the site unacceptable. A CIS shouldn't be sited in such an unsuitable location simply because ELEA owns land there. If ELEA and Holtec want to continue, they must be able to show that the site actually is suitable both in hydrology and geology and that the extensive resource development in the area will not affect the site nor be affected by the facility.

Canisters: Again, we come into the problem of the canisters—these thin-walled canisters, that can't be inspected or repaired. Since these will be sitting in shallow storage for possibly 300 years (according to one of the applicants) and certainly for 40 or 100 years, whether there will be leaks and cracks during this time is of paramount importance. With possible through-wall cracks in as little as 16 years, the likelihood of at least one of the 10,000 canisters having a through-wall crack seems extremely high. But again, NRC is ignoring the prudent and conservative approach and is assuming that not a single one will ever crack nor will a single canister ever leak. Again, this is incredible. This is the result of magical thinking—*not* science-based thinking.

It is reckless to allow canisters to be used at all that can't be inspected and can't be repaired—especially when thick-walled, safer canisters that can be both fully inspected and repaired are already available. There is no plan for a hot cell at Holtec—the only way to repair canisters that can be fixed. This again assumes there will never be a problem with the canisters and there will never be even a single instance of serious human error.

Instead, what is more likely to be the case is something like what occurred at the WIPP project where for 15 years the HEPA filters sat in their HEPA filter banks where everyone had forgotten to fill in the spaces between each filter. When the explosion did occur, the release went out through the filters but it also went out straight into the environment through the un-filled spaces between the filters. This is human error.

Potash: Southeast New Mexico, in the area of the site, is one of the largest potash producing areas in the world. This salt can be highly corrosive and will be continuously working to corrode the containers and the steel and low-density concrete Cavity Enclosure Container (CEC) from the outside while the radiation from the SNF will be working away to deconstruct things from the inside. Most of the length of the CEC will be exposed to these salts. Holtec claims that no water will enter the vertical ventilated modules (VVM) but a major storm event combined with a tornado (common in the area) could change that. All of this needs to be evaluated in detail.

Holtec claims that screens will keep debris and animals out of the VVMs. Again, this seems like wishful thinking. How intact the screens remain, whether they corrode or break or are defective to begin with needs to be studied with the experience of other local nuclear facilities in mind to see if this is credible. It is certainly incredible to believe that the VVM Interface Pad and the Top Surface Pad act as barriers against a missile.

Vents: Though evidently necessary, the vents in these modules not only can let water and debris in but can certainly let radiation out. If there is a leak or worse, a hydrogen explosion, there is an easy pathway to the environment just as with the WIPP HEPA filter banks. Every vent should be filtered in case of this eventuality. Of course, if unborated water were to enter a canister by a through-wall crack, a criticality event could occur. No filters will be able to stop that. Holtec claims there has never been a through-wall crack but this is just their assumption based, again, on wishful thinking. All their claims and assumptions must be backed up by scientific studies or they should be ignored.

Permanent repository: Because after 40 or 100 or 300 years these canisters might be too delicate to move again, or because the risk of another 10,000 or more shipments across the country might by then be recognized as being extremely dangerous under any circumstances, there is a very real possibility that this hastily conceived and cheaply built "storage" facility might become a permanent repository. Then we will have a shallow, permanent HLW disposal facility—forever—in southeast New Mexico. Then these delicate canisters will need to remain "perfect" for hundreds of thousands of years as will the monitoring and maintenance of the VVMs. This seems impossible but this possibility must also be modeled as it is one of the most likely scenarios for the future if this flawed project is allowed to continue.

Another possibility is that the SNF will end up in WIPP which is just a few miles down the road. We were promised that WIPP would never take HLW but right now they are working on a modification to their RCRA permit to allow them to receive just that. Holtec has promoted WIPP (a "nearby facility") for HLW disposal in their presentations even though there are serious questions about the interaction of

HLW with the WIPP salt and questions about whether adding the high level waste could create accelerated escape pathways for itself and for the transuranic waste that is already emplaced there. If the canisters start to crack and leak this will seem like a great alternative to everyone but the people in New Mexico who will have to make HLW a permanent part of their lives for generations to come.

SECURITY

Holtec seems concerned about the possibility of an accident from the planes flying over the facility from Holloman Air Force Base. What is really of more concern is the possibility of a terrorist flying over or into the facility with a bomb. Holtec says that the VVM Interface Pad and the Top Surface Pad act as barriers against missiles and that the facility itself is virtually invisible from the air. This is very concerning because it shows a lack of seriousness about terrorist attacks. In fact, the facility will be highly visible from the air as it has a distinctive pattern, covers a large area and looks more like a square bulls-eye than anything else.

Increased studies of Holtec's security and what is necessary to prevent an attack are necessary. No one, including Holloman pilots, should be flying over the facility at all. There should be a restricted zone around the facility and that should be monitored for aircraft at all times. Holloman should be ready to scramble planes to prevent an attack on the facility as long as the facility exists since the waste is in such a shallow configuration. Even if an attack didn't completely breach the VVMs, what would be the affect on the containers of various kinds of attacks? Would it even be possible for Holloman to stop an attack even under the best of circumstances? Or would local New Mexicans just be left as "sitting ducks?" Who would pay for this monitoring? Would restricting airspace cause other problems? Again, is this really the best place for a CIS?

Two fences to keep people from entering the facility also seems a little short—again, doing it on the cheap. Will there be armed guards? How serious an attack could they repel?

Finally, the SNF is vulnerable to a terrorist attack throughout the entire transportation phase. Even a thick-walled container was shown to be vulnerable to an anti-tank missile which blew completely through the container. Effects on the full container configuration must be tested to see what the real life vulnerabilities are. Even if both the transportation and storage containers are not completely breached, would the inner container crack? Could there be a release? How could a damaged container be remediated? Transported? Currently there is no way to salvage such a shipment but no container should be shipped before these problems are worked out and the technology available to respond adequately to such an accident or event.

RCRA MIXED WASTE PERMIT MAY BE NECESSARY

The HLW is not exclusively radioactive waste. In fact some or even possibly most of the waste includes some hazardous materials. There is no single "style" or configuration of SNF and some of these configurations include beryllium, lead and possibly characteristic zirconium. This information is available with just a cursory look at the inventory. Detailed research may reveal additional hazardous waste. **It appears that a New Mexico RCRA permit will be required.**

ENVIRONMENTAL JUSTICE

Scoping hearings: The discrimination that is occurring in the scoping process has been discussed above. But it is just one example of the discriminatory nature of the entire project. Will NRC choose to allow siting of this very dangerous facility not only in a geologically unstable and highly developed area, but also in an area that is already overburdened by other polluting and contaminating facilities and home to a large, low-income, Hispanic population?

Background: On top of high levels of naturally occurring arsenic in the soil, southeastern New Mexico has been subjected to pollution and contamination from the WIPP project, URENCO, Waste Control Specialists, the Gnome-Coach Experimental Test Site (all radioactive or mixed projects) and is in the middle of the permitting process for the Triassic Park Hazardous Waste Dump. VOCs from the Artesia refinery are spread far and wide by the high winds and much of the land has been contaminated by radioactive particulates from first the Trinity atomic bomb test and then the WIPP explosion and release in 2014. Solid waste dumps, oilfield "landfarms," massive oil and gas development and the occasional superfund site further burden the area (see *Southeast New Mexico Threats Map*, attached).

Although the Holtec *Environmental Report* incorrectly claims there are no poor people in the three county area around the site and no minority population that exceeds the site specific threshold within four or 25 miles of the site (though there are many within 50 miles even in their calculations), in fact this information is incorrect. New Mexico is always one of the poorest states in the country. Sometimes it has the very worst economy in the country. We have still not fully recovered from the Great Recession and continue to have high unemployment rates. Southeast New Mexico is one of the poorest areas in the state. In addition, this area has been studied for more than 20 years and has been asking for more information in Spanish during environmental hearings during that time.

EPA recently completed a discrimination investigation and determined that indeed, more information in Spanish as well as exposure studies were necessary for sites like the Holtec site that are regulated by the state. If indeed at least some of the waste is mixed waste and Holtec needs a state RCRA permit, it will also fall under the requirements of the Resolution Agreement that resulted from the EPA discrimination investigation. CARD has no idea how Holtec generated the figures in their *Environmental Report,* but clearly, additional studies need to be done.

Disparate impact in siting: It is the poverty, discrimination, lack of access to health care and other social factors combined with the high burden of contamination and pollution from a multiplicity of hazardous, toxic and radioactive facilities already in the area that has resulted in ***the highest cancer mortality in the state*** (see *Southeast New Mexico Threats Map*, attached). This disparate impact has existed for at least 20 years. To add another potentially contaminating facility to the area without mitigating the problem that already exists would be highly discriminatory as there is, despite Holtec's claims, a high percentage of Hispanic people in the area, including LEP Spanish-speakers, many of whom are also poor. It is not conservative to assume there will never be a release. At least one release must be assumed and its burden on the surrounding population must be modeled.

Disparate impact in transportation: Both disparate impact studies of the facility and of facility transportation must be done. Transportation must be included for both accidents and impacts from normal operations. In addition to irradiation, diesel exhaust from the additional rail traffic can alone cause a disparate negative health impact on people living or working near the routes. Understanding the extent of this exposure and studying whether environmental justice communities along the route would be disparately impacted is critical. Also, the accident risk itself, both at the site and during transportation is possibly discriminatory as it is likely a high percentage of minority and low-income people live near

railroad routes not only in New Mexico but also across the country. Whether the risk burden of an accident falls more heavily on these environmental justice communities must also be studied and understood.

Social concerns: In *Colonias Development council v. Rhino Environmental Services* the New Mexico state supreme court ruled that not only must disparate impacts be studied when appropriate, but that social concerns must always be considered. Social concerns that communities might have include the concept of disparate impacts but also include more. Even the *perception* that the area has become good only as a radioactive or hazardous cesspool can affect a culture or a community. This perception can destroy the dairy, agriculture and ranching that along with tourism and oil & gas development that historically have supported the economy of the southeast and indeed, of all of New Mexico. Lack of access to medical is another social concern. When poor and minority communities have social concerns that are ignored by the applicants or by the NRC, that is discrimination.

ALTERNATIVES

NRC must choose the no-action alternative for this project. It is a project that has been conceived in haste and is being continued as cheaply as possible in a reckless and irresponsible way. You can't do *Nuclear Safety Lite*. Real safety is not cheap. This "Safety is a Journey" approach was the attitude at Los Alamos National Laboratory (LANL) and WIPP that resulted in an explosion and release. The same reckless attitude with this project could kill and disable hundreds of thousands.

This project is based very little on scientific and technical knowledge and a lot on hope, fantasy about the future, and NRC's choice to ignore the many red flags that this project waves. This is a recipe for disaster. This approach, combined with NRC's refusal to include anyone but the most minimal number of communities in the scoping process shows that this is a political project that NRC is pursuing to show the reactor sites that the government is at long last meeting their commitments. However, the reactor sites haven't met their own commitments either, as they are supposed to be able to unload canisters back into spent fuel pools. Though they claim this is possible, so far this has only occurred in simulations and in fact there is no actual method to do this.

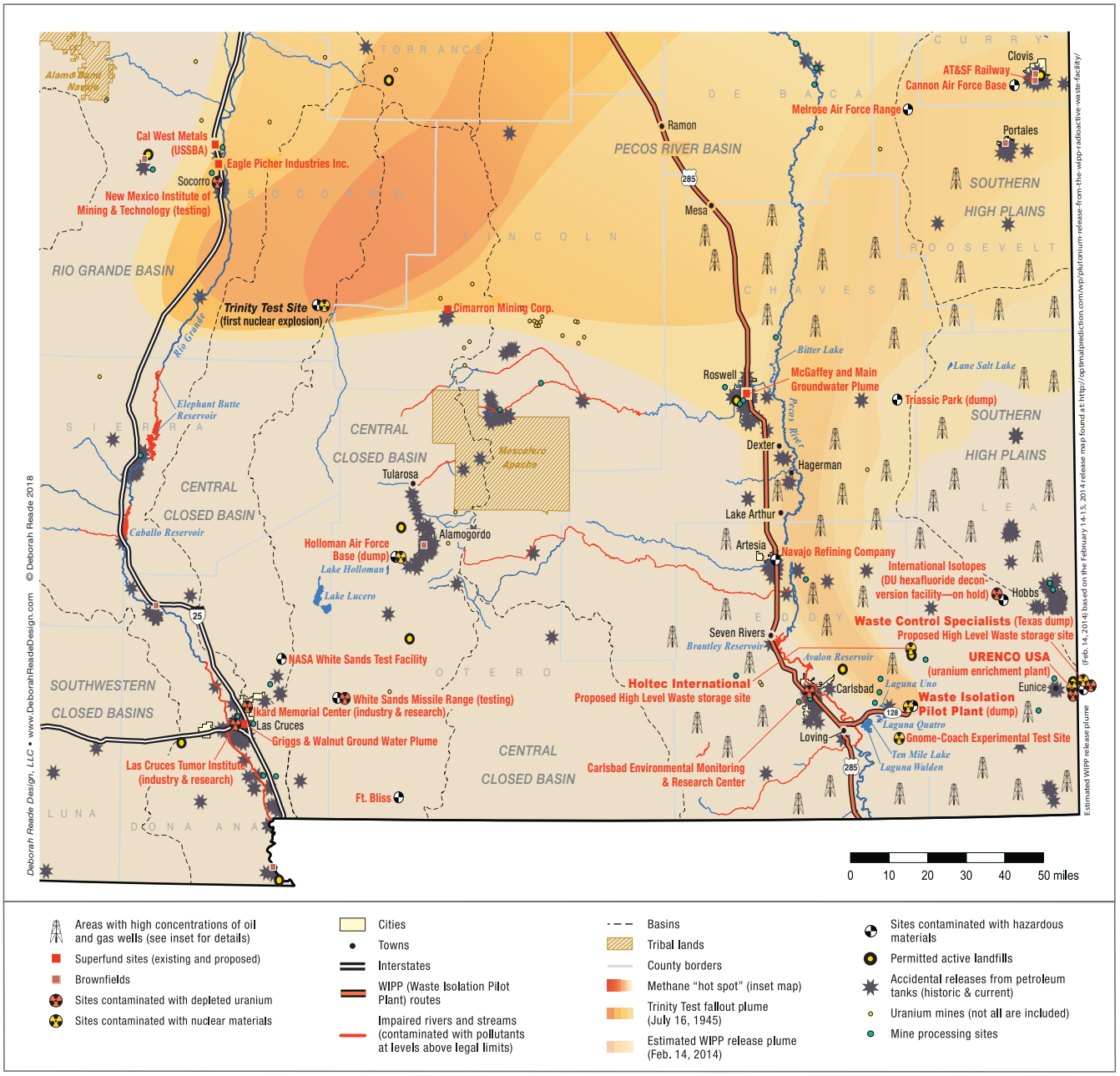
NRC must stop wasting time on Holtec (and WCS) and start switching immediately to thick-walled containers that can be fully inspected and repaired. It is true that there are some reactor sites that are not suitable for dry cask storage facilities for various reasons. But most of the sites are suitable. HLW should remain at the site or be moved to a dry cask storage site built as close as possible to the original site to minimize transportation risks as required by the NWPA. (And built in a suitable location—not, for instance, at what is now or soon will be the high tide line, as they've chosen to do at San Onofre.)

Hotcells should be maintained safely and securely at sites where they currently exist or be built at the nearby new dry cask storage sites so that inspection, maintenance and repair can proceed normally and without transportation of leaking containers. Without this capability, no HLW storage or disposal facility is truly safe.

We must then as a nation work on a real solution to the, admittedly significant, problems of this waste.

Sincerely,

Deborah Reade
for CARD

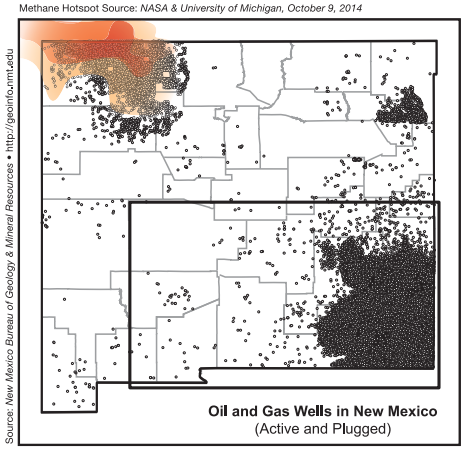


WATER, AIR AND LAND: A SACRED TRUST

The uses of water, air and land are diverse in New Mexico and will change dramatically with climate change. For caretakers of this sacred trust, this map offers a bird's eye view of the health of our environment in southeastern New Mexico. It documents primarily the energy-related sources of pollution, though in New Mexico other polluting factors are also at work. This map does not cover ***abatement sites, solid waste facilities*** and ***voluntary remediation sites,*** among other things. Also, this map shows major water basins only.

Credits: We are grateful for initial project funding from the *Mercy Sisters - Northeast Community* and for additional project funds from the *New Mexico Community Foundation* in 2013. Maps created by Deborah Reade, *Deborah Reade Design*. Research by *Concerned Citizens for Nuclear Safety, Deborah Reade Design, Multicultural Alliance for a Safe Environment*, *Partnership for Earth Spirituality,* and *New Mexico Interfaith Power and Light.* Research and data interpretation by *Carlos Bustos,* Resource Consultant and GIS Specialist. For more information, references, additional credits and action you can take to protect water, air and land, please visit ***www.SacredTrustNM.org,*** **www.earthspirituality.org, www.masecoalition.org, and www.nuclearactive.org.**

Methane Hotspot Source: *NASA & University of Michigan, October 9, 2014*



Source: *National Cancer Institute and the CDC* • https://statecancerprofiles.cancer.gov/data-topics/mortality.html