Holtec-CISFEISCEm Resource

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Subject: [External_Sender] Docket ID NRC-2018-0052; Holtec International LLC's HI–STORE Consolidated Interim Storage Facility Project
Attachments: Holtec Scoping Comments.docx

Scoping comments for Docket ID NRC-2018-0052 are attached.

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Ms. May Ma
Office of Administration
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U.S. Nuclear Regulatory Commission
Washington, DC 20555– 0001

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RE: **Docket ID NRC-2018-0052**; Holtec International LLC's HI–STORE Consolidated Interim Storage Facility Project for Spent Nuclear Fuel in Lea County, New Mexico

Nuclear Regulatory Commission:

I respectfully submit these scoping comments regarding Holtec's Environmental Report to bring more than 100,000 metric tons of high-level radioactive spent fuel from nuclear reactors around the country to southeastern New Mexico for up to 120-300 years.

Please note that I do not consent to New Mexico becoming a national radioactive waste repository for high level radioactive nuclear waste, or to 10,000 rail shipments of thin-walled HI-STORM canisters loaded with high level nuclear waste for 20 years or more through thousands of communities across the United States. Citizens of the United States should not have to risk the contamination of our land, water supplies, and ambient air quality, or the health of plants, wildlife, crops and livestock during the transport, consolidation, and indefinite storage of this highly radioactive material.

Consolidated interim storage of spent nuclear fuel also poses a future retrieval risk after a permanent repository has opened, related to the of the fragility of the thin-walled radiation barrier cask, which has made some of the same casks immobile at the now defunct San Onofre power plant in California. The casks selected for transport and storage must be retrievable to permit inspection and monitoring.

Consolidated interim storage is not a viable solution for our nation's high level nuclear waste – waste that must be monitored and maintained for at least 10,000 years. The risks associated with removing the casks decades later for transport to a permanent repository make it likely that this interim storage site will in fact become a permanent repository – one that is not designed with the necessary safeguards to shield present and future generations from known hazardous radioactive materials.

Further, it would be an environmental injustice to transport and deposit irretrievable high level nuclear waste in thin-walled canisters in New Mexico when past and present generations of New Mexicans continue to suffer daily radiation exposure from 97 legacy uranium mines and several uranium mills in the Grants Mining District of northwest New Mexico. The NRC has continued to license the storage of uranium mine and mill waste in unlined ponds and cells where it eventually seeps into underlying aquifers. In 1979, the

largest single release of radioactive waste from a breached United Nuclear Corporation uranium mill tailings dam near Churchrock, New Mexico unleashed a flood of deadly effluents that permanently contaminated the Rio Puerco as it flowed through the city of Gallup and beyond to Sanders, Arizona. Residual soil and water contamination from the spill has never been addressed.

Generations of New Mexicans in the Tularosa Basin have also been impacted by exposure to radioactive fallout from atomic bomb tests without their knowledge or consent. Collectively, thousands of workers in the uranium mines and national labs, and members of the United States armed forces have been exposed to dangerous radioactive materials in New Mexico, often without their knowledge or consent, and continue to suffer health impacts without compensation.

It would be an environmental injustice for these overburdened populations to accumulate more deadly exposure from highly radioactive materials for the benefit of those states and energy utilities that have knowingly chosen to rely on nuclear power in the absence of a permanent disposal site for the waste they generate. Most, if not all of the for-profit nuclear reactor sites possess NRC licenses that allow for longer on-site storage than the initial period requested by Holtec's project. It doesn't make sense to incur significant unnecessary risks by moving this dangerous waste across the country as each cask dissipates heat and radioactivity through countless communities for up to 120 years. The Department of Energy (DOE) estimated that a single accident has the potential to contaminate a 42 square mile area, incurring significant costs and irreversible damages. Nor will those of us subjected to additional cumulative radioactive exposure along the transport routes receive any benefit from storage in Lea County or any compensation if we are harmed.

The DOE held no tribal government-to-government consultations to discuss Holtec's application within affected tribal communities along the proposed transportation route or consent-based siting meetings in New Mexico or Texas.

Holtec International LLC and its partner, the Eddy-Lea Energy Alliance LLC, will be exempt from liability for the reasonably foreseeable risks that are posed by this project. Instead taxpayers in New Mexico that will not receive any benefits from this project will shoulder the risks of exposure and attendant health impacts. Our state and local governments will incur new financial obligations to operate and maintain the waste site long into the future. Holtec and the Eddy-Lea Energy Alliance will be allowed to reap their profits, while New Mexico will be left with the unprofitable task of hosting the nation's radioactive waste for an indefinite period. This amounts to an ENVIRONMENTAL INJUSTICE with the potential to unfairly ruin our state's economy and cause great harm to the public welfare.

The Holtec Proposal Is Contrary to Current Law

- Current law only allows the U.S. Department of Energy to take title to commercial spent fuel "following commencement of operation of a repository" or at a DOE-owned and operated monitored retrievable storage facility. Congressional authorization is still required before the Holtec International LLC site, a private facility, can accept spent fuel from commercial nuclear reactors around the United States.

- The legalities of shifting the cost of temporary storage from the DOE to private industry, taxpayers and local governments must be analyzed.
- Consent-based siting of any permanent, or indefinite, repository is required. *Blue Ribbon Commission on America's Nuclear Future, Report to the Secretary of Energy January 2012* The DOE needs to finalize rules for the provision of written consent by state, local, and affected tribal governments.
- Consent must be informed, particularly in Environmental Justice communities along the transportation route that are already burdened by uranium legacy and radioactive fallout exposures from historic bomb tests. This means that translations of key documents and reports into the native languages of communities that will be most affected by consolidated interim storage and transportation should be made available.
- An apparent conflict of interest between the Eddy-Lea Energy Alliance LLC, the coalition of area leaders that owns the project site and will accrue economic benefits at the expense of other area residents and communities along the transport route must be investigated. Public disclosure of all economic benefits that will accrue to the Alliance and its members, along with assumed liabilities, is required.
- A thorough discussion of the Holtec project's compliance with the requirements for dry cask storage under 10 CFR Part 72 is required.
- The economic risks of transporting and storing nuclear waste, including the potential for a single catastrophic accident with resulting liabilities for the licensee, federal and state actors must be factored into an economic risk-benefit analysis for this project.

Holtec Must Remove Copyrights And All Redactions in the Environmental Report

- The NRC must require Holtec to produce an Environmental Report free of copyright restriction and redaction for public review and comment. In the alternative, Holtec must be required to assume all liability for any accidents or releases related to the defective design, construction, and transport of the HI-STORM canisters and the design and construction of the storage facility.

All Impacts of Permanent and Interim Storage Must Be Analyzed

- The impacts of storing high-level nuclear waste near the Carlsbad sinkhole and US military training airspace must be analyzed in the Environmental Impact Statement (EIS) for this project.
- If an interim storage facility is built in New Mexico, the operating costs and liabilities would shift from the federal government to local governments and taxpayers. All economic impacts of this cost-shifting to New Mexico residents, taxpayers, and local governments must be clearly outlined and analyzed.
- The ability to retrieve, maintain, and monitor the containment of spent nuclear fuel in order to prevent hydrogen gas explosions, address cracked or leaking casks and prevent criticality during storage should be analyzed, as pointed out by the Nuclear Waste Technical Review Board in their December 2017 report to Congress.
- Permanent storage options utilizing welded or bolted thick canisters with the necessary safeguards to shield the environment, as well as present and future populations from known hazardous radioactive materials must be analyzed as an alternative.
- Safety protocols for cask transport and on-site operation and maintenance must be analyzed in light of numerous safety lapses at the Waste Isolation Pilot Plant (WIPP)

in southern New Mexico and Los Alamos National Lab up to and beyond the radioactive releases that occurred in 2014. A culture of safety must be implemented and maintained by the licensee and the NRC.
- The heightened terrorism and sabotage risks of transporting our nation's high level nuclear waste along public transportation corridors for consolidation in a region with unstable geology should be analyzed.

More Alternatives Must Be Analyzed

- The storage of spent nuclear reactor fuel in dry casks in some form of Hardened On-Site Storage (HOSS) near the reactor sites must be analyzed in the EIS for this project. This alternative would eliminate the risks of consolidation at one site, transportation accidents, and exposure risks to numerous communities in 44 states along transport corridors. It would also eliminate the risks of moving the radioactive waste again once a permanent repository is licensed.
- The alternative of consolidated storage being done at an existing licensed Independent Spent Fuel Storage Facility (ISFSI) must be analyzed.
- The alternative of leaving the spent fuel at reactor generating sites should be analyzed as a No Action alternative. Most reactor sites are now licensed to store waste for 60 years past decommissioning, and these sites will remain guarded for decades.
- The alternative of moving irradiated spent fuel from Holtec's less protective thin-walled HI-STORM casks to more robust and time-tested welded or bolted canisters that meet Nuclear Waste Transportation Review Board and Nuclear Waste Policy Act requirements should be analyzed in the EIS for this project.
- Transitioning our nation's energy economy to renewable sources that will not harm the public health or permanently poison our environment merits further consideration as an equitable alternative to consolidated interim nuclear waste storage.
- A moratorium on the construction of new nuclear power reactors and the production of additional high level radioactive waste until a just solution has been identified should be analyzed.

The Environmental Report Inadequately Discusses the Transportation Risks

- All forms of canister transport and their routes from the reactor site to the disposal site must be discussed and analyzed in the EIS for this project, including the potential impacts of accidents or terrorism incidents on public health and safety, along with all recommended public notification measures and emergency response actions.
- The Environmental Report does not discuss how rail shipments from reactors without rail access would be accomplished, or the risks and impacts of such shipments. All transportation routes must be designated for public review, along with the attendant risks to nearby resident populations, passersby and travelers.
- Existing railways were not built to withstand the weight of Holtec's HI-STORM canisters. Scoping for this project should include all planned rail upgrades, maintenance schedules and any additional transportation routes and carriers.
- An analysis of the cumulative weight load on existing railways from transporting HI-STORM canisters, or other more robust casks, over the entire transport period and the subsequent increase in hazards to communities along the designated transportation routes must be conducted.

Cask Safety and Integrity Must Be Addressed

- The effectiveness of thin-walled HI-STORM UMAX casks to adequately confine radioactive emissions and provide protective radiation shielding to workers and the public for 40-120 years, and beyond, should be discussed and compared to the two basic designs in wide use today – a welded design with an inner canister surrounded by 3 or more feet of steel and bolted casks with thick steel shells and two separate seals – that have contributed to safe storage over the last 30 years. *Safety of Spent Fuel Storage, U.S. NRC NUREG/BR-0528 April 2017*
- The potential for thin walled HI-STORM canisters to crack within 2 years and leak radioactive materials must be analyzed.
- The inability to, monitor, inspect or retrieve thin-walled HI-STORM casks and how this affects the long-term storage of these canisters and their eventual transport to a permanent repository must be analyzed. The Nuclear Waste Transportation Review Board recommendations for Department of Energy spent nuclear fuel should be applied to all commercial spent nuclear fuel.
- The EIS must discuss whether Holtec's HI-STORM UMAX canisters were designed and tested to meet all criteria approved by the American National Standards Institute, including leak tests.
- The NRC must analyze exactly how radioactive material from a cracked or leaking canister would be handled, since there is no wet pool or hot cell at the proposed facility site.
- High burnup fuel which has burned twice as long in a nuclear fuel reactor than other fuel before it is stored in thin-walled canisters should be analyzed for transport safety and long-term storage.
- Full-scale testing of Holtec's HI-STORM UMAX cask should be performed as recommended by the Blue Ribbon Commission on America's Nuclear Future, Report to the Secretary of Energy January 2012.
- The effectiveness of shims anchoring the baskets in each HI-STORM canister must be analyzed in relation to fuel geometry and criticality risks in light of Holtec's recent root cause analysis for loose shims in its HI-STORM UMAX canisters after a loose metal pin was found at the bottom of a canister being used at the decommissioned San Onofre power plant in February, 2018.
- NRC must evaluate the adequacy of the quality assurance program for the design and fabrication of the HIGH STORM UMAX canisters, as well as the licensee's history of compliance with all NRC regulations at each licensed facility.
- Criticality and radiation shielding risks related to the use of loose shims in the HI-STORM casks must be analyzed.
- The adequacy of the confinement boundary and associated monitoring program for the confinement boundary within each HI-STORM cask must be discussed.

The Consequences of Routine and Accidental Radioactive Materials Release Must Be Analyzed

- The cumulative impacts of routine radiation exposure on rail and other transport workers need to be analyzed.
- Dosimetry requirements, dose limits, pregnant worker protection and ALARA (as low as reasonably achievable) principles under 10CFR should be uniformly applied to all railway

workers and members of the public who will be routinely exposed to radiation during the transport of spent nuclear fuel casks along approved transport corridors without limitation. The same radiation protection regulations must be incorporated into the labor and carrier safety regulations for all workers who will be loading, transporting, and unloading the spent nuclear fuel canister shipments.

- The comparative risks of a single exposure and cumulative radiation exposure during 20 years of spent nuclear fuel transport to residents, commuters, and transients along the transportation routes should be clearly stated and analyzed.
- The risks of cumulative radiation exposure from leaking casks to emergency responders and vulnerable segments of the population – such as children, pregnant women and immuno-compromised individuals, should also be clearly stated, along with the expected health impacts and financial burdens to exposed individuals and their communities.
- The venting of radiation and heat from each transported cask should be monitored and reported to the NRC.
- The NRC must consider the use of more protective thick-walled canister designs for both storage and transport, based on Holtec's recent root cause analysis for loose shims in its HIGH STORM UMAX canisters.
- Emergency response procedures and protocols should be developed for review by the NRC for use during criticality events and accidents. Site-specific evacuation plans should be developed for each scheduled stop along the transport route, along with a generalized evacuation template to be used at all other locations.
- The NRC should provide a comprehensive listing of local emergency responders along the transport routes and at each storage site, as well as the training programs and resources available at each location.

Impacts of Future Railroads and Electric Lines Must Be Analyzed

- The environmental impacts of new rail lines and electric lines that will be constructed for the project must be analyzed.

Seismic and other Environmental Impacts on Stored Casks Must Be Outlined

- The site-specific geology of the proposed project site must be characterized. Porous "karst" formations, characterized by sinkholes and caves in this region pose subsidence risks and provide pathways for the spread of radioactive contamination from the site into regional aquifers.
- All regional water supplies around the proposed storage facility and transport routes should be identified and their connection to regional aquifers should be analyzed. The existence of Source Water Protection Plans for each impacted region should be identified and analyzed.
- Although the ER gives a statement on recent seismic activity in the area, there is no analysis of what many 3.0 - 4.0 fracking-induced earthquakes will have on casks stored near grade. The seismic impacts of nearby regional oil and gas fracking on the project site in the Permian Basin must be analyzed.
- The cumulative impacts of fracking-induced earthquakes and the region's karst geology, potassium chlorate (potash) soils, and playa lakes should be analyzed.

- Climate change impacts which increase the risk of wildfires and other extreme weather events that could affect cask transport and storage should be analyzed in the EIS for this project.
- Climate change and heat from higher burn fuel can create higher temperatures in and around the storage cask, affecting its integrity. Additionally, torrential rains that periodically flood nearby playa lakes could result in conditions that allow water to enter and accumulate in the containment holes for the storage casks. The NRC must analyze the absence of repackaging facilities at the storage site in Holtec's application for canisters that are compromised by heat or moisture.
- The potential for greater than 5% air to enter the casks through cracks and lid vents in the storage containment holes, causing hydrogen gas explosions should be analyzed by the NRC.
- A review of the comparative ability of Holtec's HI-STORM canisters to withstand all environmental conditions, including high burnup fuel temperatures, corrosive atmospheric deposits and geologic conditions such as karst formations and potash soils, in comparison to welded or bolted canisters should be undertaken.

More Cumulative Impacts Must Be Analyzed

- The Environmental Report mentions the Waste Isolation Pilot Plant (WIPP) near Carlsbad, NM, but does not analyze the impacts of a radiologic release from WIPP on the proposed interim storage site.
- The cumulative impacts of storing up to 100,000 metric tons of high level commercial nuclear waste near grade for 120 years or longer in a region with karst geology, potash soils, and playa lakes must be analyzed.
- The cumulative impact of additional radiation exposures to previously impacted communities and individuals, and other vulnerable segments of the populations in New Mexico must be analyzed.
- The cumulative impact of additional radiological releases to communities within the Tularosa Basin, the Grants Uranium Mining and Navajo Nation Uranium Mining Districts of New Mexico must be analyzed.

Environmental Justice

- The transportation and consolidated storage of high level nuclear waste on an interim basis will disproportionately burden low-income communities and tribal communities already impacted by uranium legacy waste along the transportation routes in New Mexico for a protracted period of time. These same communities will be impacted again when the waste is retrieved and transported to a permanent disposal site.
- Justice requires that the NRC consider on-site storage, or a No Action alternative, whereby communities generating nuclear waste would continue to store it until a permanent repository is designated. Additionally, the continued generation of more high level nuclear waste should be evaluated.

The continued generation of highly radioactive spent fuel at nuclear reactor sites around the country poses significant public health, environmental and security risks, with the potential to cause irreparable contamination of our water supplies, food sources and the environment.

The NRC is tasked with securing the safety of our communities, our public health and the environment in the face of these new and protracted radiation threats. Each nuclear waste storage alternative must utilize basic criteria for safe, sound radioactive waste management and transport, science-based storage site suitability, consent-based siting and evaluate cumulative impacts, environmental justice and regional equity.

Long-term plans beyond consolidated interim storage and on-site storage to manage irradiated fuel eons into the future must also be developed. Public involvement, including consultation with affected tribal governments and environmental justice populations, is crucial to ensuring that the voice of the nuclear industry is not the only one heard when these plans are reviewed.

In light of significant environmental justice concerns, our communities respectfully request extensions of both the scoping and legal intervention deadlines, to October 30, 2018 and December 30, 2018 respectively, due to the prolonged unavailability of the federal regulations.gov and NRC ADAMS websites.

Sincerely,

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