From: Kevin Kamps <kevin@beyondnuclear.org>
Sent: Wednesday, September 9, 2020 4:23 PM
To: Holtec-CISFEIS Resource
Subject: [External_Sender] Beyond Nuclear's 21st set of public comments, re: Docket ID NRC-2018-0052, re: NRC's Holtec/ELEA CISF DEIS

Dear Holtec-CISFEIS Resource and NRC Staff,

This is my 21st set of public comments in this proceeding.

I submit these comments on behalf of our members and supporters, not only in New Mexico, near the targeted Holtec/ELEA Laguna Gatuna site, but across New Mexico, and the rest of the country, along road, rail, and waterway routes that would be used for high risk, highly radioactive waste shipments to Holtec's CISF, as well as to Yucca Mountain, Nevada, on Western Shoshone land -- illegally and improperly assumed by Holtec, as well as NRC, to someday become a permanent disposal repository.

Due especially to the numerous problems I have experienced submitting public comments via this <holtec-cisfeis@nrc.gov> email address, please acknowledge receipt of these comments, and their proper placement in the official public record for this proceeding.

The following subject matter has gotten little to no attention in NRC's Holtec CISF DEIS, a far cry from NEPA's legally binding "hard look" requirement.

Risks of Loss of Institutional Control if *De Facto* Permanent, Surface Storage, Parking Lot Dumps are Abandoned, Containers Fail, and Release Catastrophic Amounts of Hazardous Radioactivity into the Environment

DOE (the U.S. Department of Energy) has warned in its EIS (Environmental Impact Statement) on the proposed Yucca Mountain, Nevada national burial dump, that loss of institutional control would eventually prove catastrophic. Entropy means that things fall apart, over long enough periods of time. The Second Law of Thermodynamics holds that disorder increases with time. DOE was focused on this happening at nuclear power plant sites, if irradiated nuclear fuel was abandoned there forever. But the same is true here. If institutional control is eventually lost at the Holtec International/Eddy-Lea Energy Alliance's CISF (de facto permanent, surface storage, high-level radioactive waste parking lot dump), the containers will eventually fail, and catastrophically release their hazardous, high-level radioactive waste contents into the living environment. Persistently hazardous, and even deadly, radioactive fallout would then flow with the winds and the waters, downwind and downstream, up the food chain, and down the generations, over greater and greater distances over longer and longer time periods. Remember, high-level radioactive waste remains hazardous, even deadly, for at least a million years into the future. This was acknowledged by the U.S. Environmental Protection Agency (EPA) in 2008, under court order in the Yucca Mountain proceeding. On July 9, 2004, the second highest court in the land, the U.S. Court of Appeals for the District of Columbia Circuit, ruled that EPA's cutting off of regulations at Yucca Mountain, just 10,000 years post-burial, was illegal, a

violation of the Nuclear Waste Policy Act of 1982, as Amended. The court ordered EPA back to the drawing board, to correct its illegal Yucca Mountain regulations. This led to EPA's 2008 regulatory revision, recognizing a million years of hazard. The 2002 lawsuit, which was consolidated with a dozen additional lawsuits in *NEI v. EPA*, was brought by NIRS (Nuclear Information and Resource Service), Public Citizen, Citizens Action Coalition of Indiana, Nevada Nuclear Waste Task Force, and Citizen Alert of Nevada. The environmental coalition's legal counsel was Geoff Fettus of Natural Resources Defense Council.

Actually, even acknowledging a million years of hazard is a lowball estimate. Take the artificial (that is, manmade) radioactive isotope Iodine-129. It has a half-life of 15.7 million years, thus at least 157 million years of associated hazard, and perhaps even 314 million years.

Such impacts could extend to the immediately adjacent surface waters, and perhaps even nearby, underlying aquifers, such as the Ogallala Aquifer. Despite the 40-odd mile distance from the Holtec site to the western edge of the Ogallala, as mentioned just above, releases from the Holtec CISF could well eventually extend 40 miles downwind and downstream -- especially considering the direction of prevailing weather patterns and winds. Thus, the Ogallala can also be considered downwind and downstream, over a long enough time period. Aquifers directly under or adjacent to Holtec/ELEA's CISF are simply in harm's way nearer term, more directly. Also, downwind or downstream surface level fallout from Holtec/ELEA's CISF could eventually find its way into the Ogallala, through natural flow paths (blowing with the winds, flowing with the rains, deposition onto and into soil, downward flow to aquifers). The Ogallala, North America’s largest, provides essential drinking and irrigation water for millions in Texas, New Mexico, Oklahoma, Kansas, Colorado, Nebraska, Wyoming, and South Dakota. As the water protectors at the Standing Rock Sioux Tribe reservation say on the Missouri River in North Dakota, *Mni Wiconi*, Water Is Life. This was made very clear by drinking water contamination disasters, in just the past decade, is such widespread locations as: Flint, Michigan (Flint River lead poisoning); Charleston, West Virginia (toxic chemical spill into the Elk and Kanawha Rivers); the Animas, San Juan, and Colorado Rivers in Colorado, New Mexico and Utah, and further downstream (EPA toxic wastewater release from an abandoned gold mine); Toledo, Ohio (Lake Erie toxic blue green algae contamination); Marshall, Michigan (Enbridge of Canada toxic tar sands crude oil spill into Talmadge Creek and the Kalamazoo River, the largest inland oil spill in U.S. history) -- to name but a few examples. A radioactive release into or contamination of the Ogallala would be similarly catastrophic. As mentioned, radioactive releases into surface waters and groundwaters nearer by the Holtec/ELEA CISF would simply take place sooner, rather than later, as compared to the Ogallala itself, given distances and radioactivity flow with the elements.

Making these risks all the worse, NRC has allowed a quality assurance (QA) failure crisis to persist in the U.S. nuclear power industry for years and decades. These QA failures extend not only to on-site storage casks at reactors, but also to the shipping cask and away-from-reactor storage cask realm, directly relevant to Holtec's CISF. The inner canisters are identical, whether used for on-site storage at reactors, transport, or away-from-reactor storage at the CISF.

Industry and even NRC whistle-blowers called attention to these QA failure risks 20 long years ago, yet little to nothing has been done to correct them since. Industry whistle-blower Oscar Shirani questioned the structural integrity of NRC-approved and industry-utilized storage casks

sitting still, let alone traveling 60 miles per hour or faster on the railways. Shirani was backed up in his allegations by NRC Midwest Region (Region III) dry cask storage inspector, Dr. Ross Landsman, who warned "The NRC should stop the production of the casks, but they do not have the chutzpah to do it. This is the kind of thinking that causes space shuttles to hit the ground." Shirani and Landsman were commenting directly upon Holtec container QA violations.

Such QA failures, shoddy design, and shoddy fabrication, re: the storage casks, means that their eventual failure, and release of their deadly hazardous high-level radioactive waste contents, will only happen all the sooner.

Although Shirani and Landsman's revelations were about Holtec casks, NRC's incompetence at best, or even collusion with industry, when it comes to cask QA violations, extends to other cask models and designs, including NAC (Nuclear Assurance Corporation) and Areva (Orano) casks to be used at ISP's CISF at WCS, TX, just 40 miles from Holtec's in NM. The QA violation crisis also extends to many, most, or all other dry cask models, such as VSC-24s (Ventilated Storage Casks), as but one additional example, as deployed at Palisades in MI, Point Beach in WI, and Arkansas Nuclear One. Holtec has bragged in its license application for this CISF that it could accommodate any and all cask model designs approved by NRC, with no exceptions. NAC challenged such claims by Holtec with an intervention in the NRC ASLB Holtec CISF licensing proceeding. But I mention the widespread QA violations, because whether Holtec containers, or other designs, the loss of institutional control and container breach risk still applies, at Holtec's CISF.

Nuclear Assurance Corporation (NAC) container – certainly to be used at ISP's CISF at WCS, TX, but also potentially to be used at Holtec's CISF in NM -- QA failures are of specific concern. In autumn 2016, shoddy welding by NAC led to the bottom literally falling out of an irradiated nuclear fuel assembly transfer caddy, allowing the assembly to strike the bottom of the storage pool at Chalk River Nuclear Labs in Ontario, Canada. Such bad welding calls into question the welds on NAC storage and transport containers as well.

At Davis-Besse atomic reactor on the Great Lakes shoreline near Toledo, Ohio, an Areva (now called Orano; previously called Cogema) design Transnuclear NUHOMS storage cask was loaded with irradiated nuclear fuel, despite local environmental interventions (including by Don't Waste Michigan) to stop it, after it was revealed the walls of inner canisters holding the high-level radioactive waste were ground too thin, violating technical specifications. But violations of technical specifications for the design and manufacture of casks in the U.S. are as rampant as QA violations. NRC looks the other way in both cases.

In fact, faulty welding was a major example of the Holtec container QA violations cited by Shirani and Landsman. Following, in italics, is a 2004 summary of Shirani and Landsman's allegations, including re: faulty welding:

> *Summary of Oscar Shirani's Allegations of Quality Assurance Violations Against Holtec Storage/Transport Casks.*
> *Holtec storage/transport casks are the first dual purpose container for irradiated nuclear fuel certified by the U.S. Nuclear Regulatory Commission (NRC).*

According to Holtec International's website (http://www.holtecinternational.com), Holtec casks are already deployed at 33 U.S. nuclear power plants. Up to 4,000 rail-sized Holtec storage/transport casks would also be used at the proposed Private Fuel Storage interim storage facility in Utah. Given the U.S. Department of Energy's (DOE) recent decision to use "mostly rail" transport to the proposed Yucca Mountain repository, Holtec casks could very well become among the most used shipping containers for highly radioactive waste.

Exelon, the largest nuclear utility in U.S., uses Holtec casks for irradiated fuel storage at its reactor sites. In 1999 and 2000, Oscar Shirani, as a lead quality assurance (QA) auditor for Exelon, identified numerous "major design and fabrication issues" during a QA inspection of Holtec International (the cask designer), Omni Fabrication, and U.S. Tool & Die (the subcontractors responsible for manufacturing the casks). In fact, he identified a "major breakdown" in the QA program itself. The problems were so severe that Shirani sought a Stop Work Order against the manufacturer of the casks until the problems were addressed. Instead, he was run out of Exelon. According to Shirani, these design and manufacturing flaws mean that the structural integrity of the Holtec casks is indeterminate and unreliable, especially under heat-related stress such as during a severe transportation accident.

Although NRC has dismissed Shirani's concerns, NRC Region III (Chicago office) dry cask inspector Ross Landsman refused to sign and approve the NRC's resolution of Shirani's concerns, concluding that this same kind of thinking led to NASA's Space Shuttle disasters.[1] He stated in September 2003, "Holtec, as far as I'm concerned, has a non-effective QA program, and U.S. Tool & Die has no QA program whatsoever."[2] Landsman added that NRC's Nuclear Reactor Regulation division did a poor follow-up on the significant issues identified, and pre-maturely closed them.

Shirani alleges that all existing Holtec casks, some of which are already loaded with highly radioactive waste, as well as the casks under construction now, still flagrantly violate engineering codes (such as those of the American Society of Mechanical Engineers [ASME] and American National Standards Institute [ANSI]), as well as NRC regulations. He concludes that the Holtec casks are "nothing but garbage cans" if they are not made in accordance with government specifications.[3]

Specific examples of the QA violations and related problems alleged by Shirani include:

- *Welding problems, such improper "fast cooling" of hot cask welds and metal using fans and air conditioning equipment, which are in violation of ASME and ANSI codes and risk tearing and cracking of the unevenly cooling welds and metal, in order to meet production goals. Welds on the casks were also performed by unqualified welders. Even NRC has*

acknowledged that "weld quality records are not in agreement with the code requirements."[4]

- *Inadequate controls on the quality of materials used in the manufacturing process, risking brittleness and weakness in the casks.*
- *Holtec's failure to report holes in neutron shielding material (neutrons are especially hazardous emissions from highly radioactive waste).*
- *US Tool & Die's failure to use coupon (a small physical sample of metal) testing, and Post Weld Heat Treatment on a regular basis, as required by ASME code and in violation of the codes that were part of the license agreement with NRC.*
- *Holtec and U.S. Tool & Die quality control inspectors' bypass of hundreds of non-conforming conditions, departures from the original design during cask manufacture. The departures from the original design amount to design changes that require revised analysis to guarantee that manufactured casks actually live up to the structural integrity of the original design. The fact that this revised analysis was never done is in violation of ASME and ANSI codes, and thus NRC regulations, and means the actual manufactured casks' structural integrity is questionable, according to Shirani.*
- *Holtec's consent to allow U.S. Tool & Die to make design decisions and changes, despite the fact that U.S. Tool & Die does not have design control capability under its QA program.*
- *Failure to conduct a "root cause investigation" of Holtec's QA program, even though root causes are the main reason for repeated deficiencies.*
- *Exelon's obstruction of Shirani from performing any follow-up of the audit to confirm that problems had been solved, despite knowing that the fabrication issues identified would have a detrimental impact on the design.*
- *Exelon's falsified quality-assurance documents and the misleading of the NRC investigation, stating that Shirani's allegations of QA violations were resolved when in fact they were not.*
- *Lack of understanding in the NRC of the design control process and Holtec's QA program, relating to flaws in welding, design, manufacturing, and materials procurement control. NRC lacks a corrective action mechanism for repeated findings. Shirani alleges his audit findings embarrassed NRC because it had also audited the Holtec casks just a few months previously but found no problems whatsoever.*

Shirani concludes that these numerous design and manufacturing flaws call into question the structural integrity of the Holtec casks, especially under heat-related stress such as during severe transportation accidents. He also warns that his eight-day audit showed him only a snap shot of problems, and that there could in fact be additional ones yet to be identified.

[1] Elizabeth Brackett, "Nuclear Controversy," " Chicago Tonight," WTTW Channel 11 Television, Chicago, Illinois, January 29, 2004.

[2] J.A. Savage, "Whistleblower Alleges PG&E Proposed Dry Casks Slipshod," California Energy Circuit, Vol. 1, No. 1, Berkeley, California, September 5, 2003.

[3]Ibid.

[4] April 2002 NRC review panel memo, cited in J.A. Savage, "Whistleblower Alleges PG&E Proposed Dry Casks Slipshod," California Energy Circuit, Vol. 1, No. 1, Berkeley, California, September 5, 2003.

To make matters worse, both Oscar Shirani and Dr. Ross Landsman told me that Holtec CEO Krishna Singh offered them lucrative bribes, in exchange for their silence on Holtec's QA failures. Shirani and Landsman turned down Singh's bribes, and continued to raise warnings about this safety significant problem that Holtec and NRC have so long ignored. I have commented on Holtec's bribery scandals previously, during both this DEIS public comment period, as well as during the environmental scoping period in 2018.

All this boils down to the risk that *de facto* permanent abandonment of high-level radioactive waste at the surface, at Holtec/ELEA's CISF, could lead, sooner rather than later, to cask failure, and catastrophic radioactivity release.

NRC, in its Nuclear Waste Confidence Environmental Impact Statement (ultimately renamed the Continued Storage of Spent Nuclear Fuel Rule and Generic EIS), asserted that whether on-site at nuclear power plants, or away-from-reactor (as at Holtec/ELEA's CISF), failing dry casks could simply transfer their contents into a brand new replacement cask. But not a single such transfer has ever taken place in the U.S., dating back to the advent of dry cask storage (at the Surry atomic reactor in Virginia) in the mid-1980s. This, despite the fact that numerous dry casks, as at Palisades in MI, are acknowledged by industry and/or NRC to be defective.

NRC asserted in its Nuke Waste Con Game GEIS that non-existent “Dry Transfer Systems” -- that have yet to be designed -- could be built at some unspecified future date, with no known source of funding, to accomplish this cask-to-cask transfer, when needed. Despite many thousands of public comments expressing concern about such an overly optimistic, science fiction plan, NRC has stood by its Dry Transfer System fantasy in its Final EIS (“Nuclear Waste Confidence” had to be changed by NRC to “Continued Storage of Spent Nuclear Fuel,” as critics had effectively changed the phrase to “Nuke Waste Con Game”!)

Despite multiple contentions brought by intervenors (including Don't Waste Michigan, *et al.*, represented by legal counsel Terry Lodge) against Holtec's CISF in the NRC ASLB licensing proceeding, at this point, neither will Holtec/ELEA voluntarily incorporate a DTS into its CISF design, nor will NRC require it be done. Outrageously, NRC's apathy re: Holtec's CISF lacking a DTS flies in the face of NRC's own Nuke Waste Con Game Rule and GEIS assurances!

Frighteningly, DTSs may be a fantasy plan on which NRC and Holtec/ELEA cannot deliver. In that case, abandonment and eventual failure of high-level radioactive waste storage containers at this proposed CISF could well lead to the catastrophic releases of hazardous radioactivity that DOE warned about in its Yucca Mountain EIS!

Even NRC Chairman Allison Macfarlane, in her vote along with the unanimous NRC Commissioners' rubber-stamp of the Nuke Waste Con Game, added a caveat. She warned in a note that since loss of institutional control is guaranteed over time, by definition, NRC must address it. In violation of NEPA, NRC has not done so in this Holtec CISF DEIS.

Sincerely,

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Beyond Nuclear aims to educate and activate the public about the connections between nuclear power and nuclear weapons and the need to abolish both to safeguard our future. Beyond Nuclear advocates for an energy future that is sustainable, benign and democratic.

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