

Holtec-CISFEISCEm Resource

From: Susan Shapiro <susan@hitoshapirolaw.com>
Sent: Monday, July 30, 2018 10:34 PM
To: Holtec-CISFEIS Resource
Subject: [External_Sender] COMMENT TO the NRC on Docket ID NRC-2018-0052: Holtec International's HI-STORE Consolidated Interim Storage Facility Project

Dear Nuclear Regulatory Commission Staff:

Reject Holtec International's application for a Consolidated "Interim" Storage Facility (CISF) for high level nuclear waste first because centralized or consolidated interim storage sites are NOT allowed under US federal laws to the extent the Department of Energy and US taxpayers are expected to own and transport the waste.

The NRC cannot accept and cannot rely on the Environmental Report done by Tetra Tech for Holtec, as it is incomplete. It does not provide an adequate environmental analysis.

It does not consider important safety information:

ADDITIONAL HEAT WASTE - HIGH-BURN UP FUEL IS HOTTER THAN DESIGN BASIS OF THE PROPOSED HOLTEC CASKS.

The NRC must require a full evaluation of the structure integrity of the proposed casks when storing "high burn-up" fuel.

Years ago the NRC approved use of high-burn up fuel in many reactors throughout the countries nuclear fleet. There are not limitations from high-burn up fuel being stored in the proposed Holtec casks.

Without a scientific study of the adequacy of the Holtec casks when used to store high-burn up fuel there can be no confidence or assurance that the Holtec casks will work as advertised when fuel hotter than the design basis of the casks is stored within them.

In the past the NRC has mistakenly accepted manufacturer's advertised ability to safety standards, which proved to be untrue. For example the fire protection insulation used in reactors throughout the nuclear fleet proved not to work as advertised. This mistake resulted in the public living near reactors being placed in unnecessary danger and the expensive retrofits, necessary to correct substandard fire safety to bring nuclear reactors into compliance with the Atomic Energy Act. (See. Union of Concerned Scientists "NRC's Failure to Enforce Reactor Fire Regulations" https://www.ucsusa.org/sites/default/files/legacy/assets/documents/nuclear_power/ucs-nrc-fire-regulations-5-2-13.pdf)

Without testing of the proposed Holtec casks for high-burn up fuel, the NRC's approval of use the proposed Holtec casks would be arbitrary and capricious and would be a violation of the NRC's mandate to protect public health and safety.

CARBON-14

The Environmental Report does not consider whether the casks will adequately protect the environment from release of Carbon-14.

Organization for Economic Co-Operation and Development, Nuclear Energy Agency (NEA) Group of Experts reports found that ,

Carbon-14 is present in the nuclear waste; how and how fast carbon- 14 is converted to carbon-14 dioxide gas -(or other gases) may influence its release to the atmosphere. Based on low-burn up fuel the estimate of the amount of carbon-14 in unprocessed spent nuclear fuel or 1 curie/metric tonne of heavy metal (Ci/MTHM). 100% of the carbon-14 in the waste containers is available to be oxidized to become gaseous carbon-14 dioxide.

Gaseous Carbon-14, radioactive CO₂ released into the atmosphere is a highly effective climate change greenhouse gas, which is exponentially more destructive than non-radioactive CO₂.

Carbon-14 produced in the power reactor is emitted primarily as radioactive carbon dioxide. Carbon-14 is produced in "all reactor types except PWR. (see. Proposed nuclear power plants in UK-, potential radiological implications for Ireland , Radiological Protection Institute of Ireland, May 2013

[//www.epa.ie/pubs/reports/radiation/RPII_Proposed_Nuc_Power_Plants_UK_13.pdf](http://www.epa.ie/pubs/reports/radiation/RPII_Proposed_Nuc_Power_Plants_UK_13.pdf), p.130

The effectiveness of whether the engineered barriers of the proposed Holtec casks will adequately reduce or impede releases of Carbon-14 is cannot be determined because there has been little research and development of engineered barriers specifically designed to contain carbon-14 in an unsaturated repository.

The assumed time to waste container failure are quite short in comparison to the 6,730 year half-life of carbon-14. The uncertainties associated with the calculation of health risks or increase global climate change are unlikely to be resolved through further research (at least in the near term) and therefore constitute a source of uncertainty that is for all practical purposes irreducible.

Failure to consider the harsh environment of the proposed site, in more than a cursory dismissive way, does not provide adequate information for the NRC to rely on the integrity of the proposed Holtec casks to contain Carbon-14, under decades of high temperatures, salty dry climate, potential flash floods, lightning, burrowing animals, sand, blocked vents, wind, rain, fire on the casks and waste. Assume increased earthquake risks and other impacts from fracking (which is not prohibited) near and under the site Based on this glaring lack of information regarding potential Carbon-14 releases from the proposed Holtec casks make it impossible for the NRC to rationally and reasonably approve the use of the Holtec casks and site.

ENVIRONMENTAL JUSTICE

The Holtec site VIOLATES ENVIRONMENTAL and ECONOMIC JUSTICE. The proposed area has valuable industries including pecan, cattle ranches, dairy, and other local farming interests that would be threatened by the site. Even some of the hazardous and extractive industries that are a big part of the economy oppose the dump. New Mexico "has suffered enough as a national sacrifice zone at the hands of the nuclear industry, including abandoned uranium mines, the Manhattan Project, Trinity Test, plutonium contamination in the rivers downstream from Los Alamos, uranium enrichment, and hosting the nation's transuranic waste at the Waste Isolation Pilot Plant. As one of the poorest states, and a majority minority state, New Mexico has experienced environmental racism for decades. People of Color continue to be disproportionately impacted by hazardous and toxic wastes." (Samia Assed, Chair of the New Mexico Poor People's Campaign; see: www.nonuclearwaste.org) NRC should assess the multiple stresses on New Mexicans and failures to compensate them over the history of the atomic age.

CASK DANGERS. None of today's certified waste containers are designed for real world transport conditions (temperatures, crash speeds, submersion in deep water) and have not been physically tested despite dump-promoter's misuse of 40 year-old crash-test videos on totally different casks. The storage containers cannot be monitored for potential cracks and leaks, inspected, repaired or replaced even though we know the waste will be dangerous longer

than they will last. The technology is in the “future” according to NRC staff. Nuclear Regulatory Commission (NRC) should include evaluation of moving 10’s of 1000’s of shipments of the most deadly radioactive waste in super-heavy, inadequate containers over deteriorating railroad tracks, roads and bridges...impacts from many thousands of shipments on infrastructure, on people, businesses, communities, resources all along the way

EMERGENCY RESPONSE. Assess and report on the reliability and capability of volunteer and distantly-located emergency response personnel upon which the site will rely. Include availability, training, equipping and notification of emergency responders all along the routes.

CONSOLIDATED “INTERIM” STORAGE (CIS) COULD BECOME PERMANENT. NRC must analyze the consequences of the waste remaining indefinitely at the site...never moving to another location. Holtec proposes to “consolidate” up to 173,600 metric tons of high-level waste from all US nuclear power reactors to New Mexico, near the famous Carlsbad Caverns, to “temporarily” store for 40-120 years. (It could take 40+ years to move it there!) The waste would allegedly be moved again but if no permanent site is found or money to move it again never appears, it could stay forever, despite not being designed for permanent isolation.

REPROCESSING + PROLIFERATION DANGER. NRC, analyze the possibility of the waste being reprocessed at the site, since consolidating waste is the first step to dangerous reprocessing to extract plutonium, increasing nuclear weapons proliferation, massive water use and intense, irreversible environmental contamination. Reprocessing was proposed at this same site before and must be addressed in the EIS. Additionally reprocessing produces and releases the most dangerous radioactive greenhouse gas, Krypton-85 which super heats the troposphere and rapidly accelerates climate change.

In the troposphere on the other hand, Krypton-85 is believed to have a significant role in ozone formation compared to cosmic rays. This is especially significant at night, because normally ozone is not generated during the night, as it requires the presence of sunlight. Krypton-85 generates tropospheric ozone, during the day as well as during the night. Normally, Ozone concentrations in the troposphere drop to near zero during the night.³ In the presence of Krypton-85 however, ozone can be created at night as well. What are the effect of this? Not a lot is known yet, unfortunately, despite the estimated eight orders of magnitude increase of ozone in our atmosphere. What is know about ozone however, reveals a cause of concern. Besides the fact that tropospheric ozone functions as a greenhouse gas, ozone damages plants.

The study shows that krypton-85 from nuclear fission enhances air ionization and, thus, interferes with the atmospheric-electrical system and the water balance of the earth atmosphere. This is reason for concern: There are unforeseeable effects for weather and climate if the krypton-85 content of the earth atmosphere continues to rise. There may be a krypton-specific greenhouse effect and a collapse of the natural atmospheric-electrical field. In addition, human well-being may be expected to be impaired as a result of the diminished atmospheric-electrical field.

See: Climate risks by radioactive krypton-85 from nuclear fission Atmospheric-electrical and air-chemical effects of ionizing radiation in the atmosphere
<http://www.opengrey.eu/item/display/10068/255704>

If 85Kr continues to increase, changes in such atmospheric processes and properties as atmospheric electric conductivity, ion current, the Earth’s magnetic field, formation of cloud condensation nuclei and aerosols, and frequency of lightning may result and thus disturb the Earth’s heat balance.

For all of the these reasons, it would be arbitrary and capricious for the NRC to approve use of the proposed Holtec casks at the proposed Holtec site and would be a gross violation of the Atomic Energy Act.

Sincerely yours,

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