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Incinerator Violates Cardinal Rule of Containment

A Department of Energy (DOE) Lawrence Livermore National Laboratory internal report on a proposed incinerator accurately characterizes the problem of incinerating nuclear waste. "We view incineration as a violation of the cardinal principle of radioactive waste treatment; namely, containing radioactivity rather than spreading it around."

The planned Advanced Mixed Transuranic Waste Treatment Plant (AMWTP) slated for the Idaho National Engineering and Environmental Laboratory (INEEL) near Idaho Falls has Wyoming residents justifiably concerned. Not only because INEEL has an abysmal operating record for managing the most dangerous of hazardous materials, but as attorney Gerry Spence notes, "that while the real dangers from emissions lie in Wyoming, nothing was done to protect the rights of Wyoming citizens. They were not give notice, the right to provide any input into the licensing process and were left utterly in the dark. So the damage occurs through the air into Wyoming, but Wyoming was not protected, received no due process, and the EPA turned its feet up and wagged its tail."

The proposed AMWTP Idaho Air Permit notes that the annual radioactivity processed by the incinerator will be 647,000 curies, with a thirteen-year total of 8,411,000 curies. Environmental Protection Agency considers radionuclides so biologically hazardous that the regulatory limits for isotopes in the environment are in units of pico curies. A pico curie is one trillionth of one curie.

In addition to radioactivity, the AMWTP permit acknowledges some 43 chemicals and heavy metal contaminants that will be released to the air, eleven of which are known carcinogens. Currently, there is a heated debate concerning the combined or synergistic health effect of radiation and chemicals that is more biologically hazardous than individual exposure. The Centers for Disease Control INEEL Health Effects advisory committee is developing a recommendation to the National Institute for

Environmental Health Sciences to conduct studies on the synergism of radiation and chemical exposure.

The AMWTP is the second DOE attempt to incinerate its mixed transuranic nuclear waste. The first attempt was called the Process Experimental Piolet Plant (PREPP) built in the late 1980's at INEEL at a cost of nearly \$100 million. PREPP reportedly went through trial burns required for final operating permits in 1992 but the project was canceled due to design problems.

DOE signed a \$1.1 billion contract with British Nuclear Fuels Limited (BNFL) to build and operate the AMWTP for treatment of mixed transuranic nuclear waste. This is waste that has radioisotopes heavier than uranium, like plutonium, in concentrations greater than 100 nano curies per gram and also has hazardous chemical waste "mixed" in with the nuclear waste.

The deal is moving forward despite justified public concern expressed at state-sponsored hearings on BNFL's air pollution source permit application and Wyoming residents protest against not being given official hearings on the record. DOE's public statements attempt to trivialize the nature of this waste by saying that it is mostly gloves, paper, and rags from nuclear facilities around the country. A closer review of the environmental impact statement shows that less than 25% falls into this innocuous category. It should also be noted that there is no upper radioactivity limit for transuranic waste.

According to BNFL's Advanced Mixed Waste Treatment Plant (AMWTP) Air Permit, the facility will employ a number of treatment operations depending on the type of waste in the throughput. The proposed AMWTP would retrieve, sort, characterize, and treat approximately 85,000 cubic meters of transuranic (TRU) waste, alpha-contaminated low-level mixed waste currently **stored** at the INEEL Radioactive Waste Management Complex, and package the treated waste for shipment offsite for disposal. The AMWTP facility could also treat an additional 120,000 cubic meters of waste from INEEL and other DOE sites.

In June, CDC's INEEL Health Effects Subcommittee unanimously passed a resolution calling on the federal Agency for Toxic Substances and Disease Registry to review the proposed AMWTP to "ensure that health and safety requirements are met with special emphasis on proposed incineration of transuranic waste and emission control system's ability to filter ultra-fine particles of plutonium."

Generally, public concern has focused on the incineration component of the AMWTP process. The other processes of super-compaction and grouting (mixing with cement) are less controversial except for DOE's priority of treating the **stored** waste first and making no commitment to exhume the **buried** waste that currently poses the greatest hazard to the underlying Snake River Aquifer. The importance of prioritizing stored waste over the buried waste cannot be over emphasized. Admittedly, DOE did initiate a demonstration project on Pit-9 at the INEEL waste burial ground. The Pit-9 project, like the BNFL incinerator was part of DOE's venture into privatization of its waste management. DOE's claims that private corporations could build, operate, and treat radioactive waste more economically than the government's use of traditional means of contracting.

The Pit-9 contract went to a Lockheed Martin subsidiary that eventually reneged on its contract ostensibly because the waste in Pit-9 turned out to be much more radioactive than previously thought. This oversight of the waste characterization meant that the initial incinerator plans would be inadequate to handle the higher radiation fields. DOE and Lockheed Martin are now locked in heated litigation over the aborted contract.

DOE must utilize the Pit-9 experience to differentiate between appropriate and inappropriate privatization. Purchasing standardized tires for its rolling stock cannot be equated with first-of-a-kind radioactive waste treatment facilities. Just as important is the pressing need for DOE to radically reform its cost plus maintenance and operations contracting procedures that previously allowed runaway overhead. Setting minimum overhead rates backed up by aggressive auditing will facilitate cost containment, so that cleanup dollars actually go toward environmental remediation. Critics also warn that state and federal regulators will have less control over a privatized incinerator like the AMWTP.

The most credible critics of the AMWTP plan insist that the portion of the waste slated for incineration, currently about 25%, be kept in the existing safe storage buildings. DOE must invest in

new research and development to improve current questionable emission control systems. Additionally DOE must focus on exhuming the buried waste whose contaminants continue to migrate to the aquifer. Problems encountered in the Pit-9 fiasco can be overcome if adequate resources and policy commitment are applied to the task.

Another major criticism of DOE is its unwillingness to fully characterize, or identify the hazardous composition of its waste. Recently, TRU waste shipments from INEEL were suspended to the Waste Isolation Piolet Project (WIPP) in New Mexico because DOE failed to accurately characterize the waste and meet WIPP waste acceptance criteria. This is not a good sign because this deficiency could mean an unnecessary quantity of waste is processed in the AMWTP incinerator when it is constructed.

Similar operating or proposed DOE radioactive waste incinerators at Rocky Flats in Colorado, Los Alamos in New Mexico, and Lawrence Livermore in California, were shut down as a result of successful litigation against DOE by environmental organizations. The primary argument in the suits was the actual versus the claimed efficiency of the filtration systems.

DOE's Pacific Northwest Laboratory reports, gained by EDI through the Freedom of Information Act, on beagle dogs and rats subjected to plutonium in the lungs showed a near total mortality rate. Even minute particles of plutonium inhaled into the lungs pose a major risk of lung cancer.

Clearly, DOE is required to treat its "mixed" radioactive waste to meet Resource Conservation Reconvey Act (RCRA) requirements. These legitimate regulations forbid burial of liquid and flammable chemicals without treatment. This waste must be safely stored until an approved non-incinerator option can be developed. Additionally, a very comprehensive waste characterization must be in place to prevent criticality of fissile materials during the super-compaction process. □

What can you do?

- Contact your state representative
- Contact your governor
- Contact your state health department
- Contact your county commissioner

And express your concerns

