Testimony of Todd Leake

SB2159

ND House Energy and Natural Resource Committee

March 14, 2025

Chairman and committee members:

My name is Todd Leake, I farm in central Grand Forks County near Emerado ND.

Since 2016 the legislature has been wrestling with the issue of whether or not to allow the State Energy Research center, and by association the EERC to conduct research or pursue projects that will result in the exploration, storage, treatment, or disposal of high-level radioactive waste in North Dakota. Previous research was into the matter of Deep Borehole Storage of High Level Nuclear Waste in Pierce County

Deep borehole disposal involves drilling a hole about 5 km (3 mi) down into the Earth's crust. High level waste, such as spent nuclear fuel would be sealed in strong steel containers and lowered down the borehole, filling the bottom one or two kilometers of the hole. Current technology limits the diameter of the borehole to less than 50 centimetres (20 in). It is estimated that roughly **800 boreholes** would be needed to store the entire existing nuclear waste stockpile of the US.

The Trump Administration terminated deep borehole programs in 2017. ENERCON company had been working on a potential site near Nara Visa, in Quay County, New Mexico. DOE gave written confirmation on May 23, 2017 to the four contractors working on the borehole program that due to shifting funding priorities, DOE has chosen to defund the Deep Borehole research, citing the need to support funding requests to further Yucca Mountain and interim storage options. The Donald Trump Administration requested $150 million for 2018 across the Energy Department and the Nuclear Regulatory Commission to restart DOE's application to license Yucca Mountain in Nye County, Nev., as a nuclear waste repository.

The Biden administration affirmed the first Trump administrations' interpretation of high-level radioactive waste, but reversed policy, which allowed again for the possibility of using deep borehole disposal as a method for disposing of such waste.

Yucca Mountain in Nevada was named in the amended Nuclear Waste Policy Act (NWPA) of 1982 as the only location in the United States where commercial spent nuclear fuel could be disposed. Ending the ban on the State Energy Research Center to conduct disposal alternatives for high level waste disposal is pursuing the recent Biden

administrations misguided policy of Borehole disposal, and thus counteracting the Trump Administration's policy of completing and opening the Yucca Mountain site.

Major isotopes of plutonium, americium, neptunium, iodine, technetium, and uranium daughter products will remain radioactive for several million years. Yet from the standpoint of radio- toxicity, the greatest concern extends over about 10 000 years. That's still a long time

North Dakota did not create this spent fuel problem, yet, because of the politics around completing and opening Yucca Mountain, utilities and the Federal Government are looking for other states, like low population ND, to dispose of this High Level Waste. According to the General Accountability Office website :

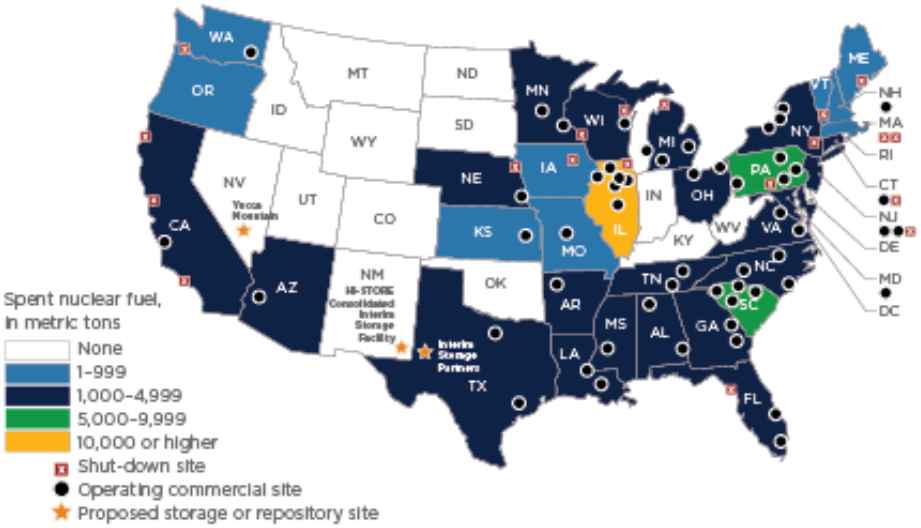
> **"Spent nuclear fuel.** The nation has over 90,000 metric tons of spent nuclear fuel from commercial nuclear power plants. DOE is responsible for disposing of this high-level waste in a permanent geologic repository but has yet to build such a facility because policymakers have been at an impasse over what to do with this spent fuel since 2010. As a result, the amount of spent nuclear fuel stored at nuclear power plants across the country continues to grow by about 2,000 metric tons a year. Meanwhile, the federal government has paid billions of dollars in damages to utilities for failing to dispose of this waste and may potentially have to pay tens of billions of dollars more in coming decades. If Congress were to authorize a new **consent based** process for siting a repository, it could help break the impasse over a permanent solution for commercial spent nuclear fuel."

In my conversations with a former US Dept. of Energy Official, Deep Borehole HLW Disposal has never been done anywhere on the globe and was discarded as an option in the 1960's. Yucca Mountain was scientifically determined to be the best and safest scenario.

Deep Borehole disposal is risky, as the material place at the bottom of the borehole is designed to create "Hot Zone", to melt the granite surrounding the borehole casing and as it eventually cools, great a sealed granite zone around the borehole. No research has been done to understand what might happen in that scenario.

"The concept of deep borehole disposal for high-level nuclear waste has faced considerable public opposition and technical challenges, leading to its cancellation in some instances, and remains unproven in the field." - Center on Global Energy policy at Columbia University SIPA

Figure 2: Stored commercial spent nuclear fuel amounts, through 2019, and locations, as of June 2021



Source: Government Accountability Office, "Commercial Spent Nuclear Fuel: Congressional Action Needed to Break Impasse and Develop a Permanent Disposal Solution," September 2021.

As can be seen in the figure above ND did not create this problem and should not be asked to be the disposal site for this problem. Please vote a **Do Not Pass** on 2159 and help the Trump Administration fulfill the Reagan Administration's policy of completing and opening Yucca Mountain as the Nations' single HLW disposal site.

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