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## Entrepreneur drills into AI energy demand with second nuclear startup



Liz Muller founded Berkeley-based Deep Fission on the heels of starting her first nuclear industry startup, Deep Isolation. JESSICA PAUL



By Ted Andersen – Digital Editor, San Francisco Business Times Jun 2, 2025

A Berkeley entrepreneur is drilling down — literally — into the complex problems facing the tech industry's desire for nuclear energy to power artificial intelligence.

A decade ago, Elizabeth Muller started Deep Isolation with her father Richard Muller, a professor emeritus of physics at UC Berkeley, in order to disrupt the nuclear waste industry via disposal solutions using drilling technologies. Now she's grown that startup and staffed it with a new CEO, and she's also started a new nuclear-minded company in Berkeley — Deep Fission — focused on placing nuclear reactors a mile underground.

"I think it's a very exciting time for nuclear," Muller told the Business Times. "AI needs this electricity, and if it can't get it from nuclear, it's going to need to get it from somewhere else."

And when it comes to earthquakes, she said Deep Isolation has already done a lot of the legwork on that subject. "We think that the risk of earthquakes is, again, pretty small," she said.



Elizabeth Muller and her father Richard Muller perform a recovered canister test for their nuclear waste startup Deep Isolation.

## COURTESY OF DEEP ISOLATION

Deep Fission has about two dozen employees — including Muller's father Richard, who also came over from Deep Isolation — and is growing fast, with Muller noting that she is hiring primarily engineers at this point to get the company to final design and licensing. The reactors themselves have not been built and key partnerships would need to be put into place to bring to life what's on the drawing board, but Muller said some early partnerships are already falling into place.

The first, and most obvious, is with Deep Isolation, where she remains executive chair of the board.

Last month, the two companies signed a memorandum of understanding to collaborate on spent fuel management for Deep Fission's advanced underground reactors. Specifically, the MOU stipulates that the two companies will explore the potential licensing and use of Deep Isolation's patented underground disposal technology for managing spent nuclear fuel and radioactive waste from Deep Fission's underground reactors.

Muller said that rather than pulling the waste up and repackaging it and putting it into storage, the idea is to work together to just leave it underground. "Deep Isolation has already showed how safe that is, so we are pretty excited about the idea of potentially never having to bring up the waste, never having to handle it and just keeping it at the bottom of the borehole the whole time," she said.

Meanwhile at Deep Isolation, new CEO Rod Baltzer took over from Muller in 2024. Baltzer, a company veteran who had served as chief operating officer since 2018, told the Business Times that Deep Isolation is collaborating with Alameda-based Kairos Power, a nuclear technology company developing an advanced, fluoride salt-cooled high-temperature reactor for energy.

In May, Deep Isolation also announced it had successfully completed Project PUCK, a government-funded initiative to demonstrate the feasibility and potential commercial readiness of its universal canister system to manage TRISO spent nuclear fuel.

A representative from Kairos Power said Kairos does not have an agreement with Deep Isolation to manage spent fuel, but is rather simply sharing information with it to help validate the assessment of Deep Isolation's universal canister system under Project PUCK.

Baltzer said that as new nuclear technologies emerge, a forward-thinking approach to waste disposal is critical.

He said that the European Union has a system where if a company wants to include nuclear as a green energy option and get green financing and discounts for that, then it also has to have a disposal option. "So, hole disposal is really one of the only things that can satisfy that requirement, and so there has been a lot of interest we've seen from Europe," he said.



Rod Baltzer, CEO of Deep Isolation DEEP ISOLATION

Deep Isolation has raised total funding of \$26.1 million over six rounds since its founding. It landed the lion's share of that in 2020 with a \$20 million Series A round led by nuclear

industry leader NAC International Inc. It has also published technical papers, formed collaborations with industry leaders like Bechtel National and Schlumberger and completed a public demonstration in Texas in 2019. In 2020, it also established a customer base in the U.S. and Europe