[The following comment submittal was submitted in writing to the Idaho Leadership in Nuclear Energy (LINE) Commission due to the May 12, 2021 phone-in meeting problems. See the LINE website at https://line.idaho.gov/agendas-and-meetings/]

Tami Thatcher, Public Comment.

May 12 LINE Commission Meeting.

My public comments were disallowed by intentional or unintentional Webex meeting connections. I muted my phone while I listened in to the meeting starting at 8 am. My phone was unmuted but no one could hear me when I spoke up when it was time for public comment.

The Idaho LINE Commission is dangerously poised to do anything it can to promote nuclear energy. The extent that the LINE commission is terribly unbalanced toward unapologetic promotion of everything nuclear is troubling.

The Idaho National Laboratory speakers on May 12 clearly stated that their goal was to promote nuclear technology. Words like safe and affordable are tossed around but the goal is to promote nuclear technologies, not to find the best solutions to our energy problems.

There is no similar advocate for safer, more affordable non-nuclear energy technologies.

The Department of Energy is promoting such a wide range of nuclear technologies, it appears that the DOE cannot or will not discriminate among any company wanting to jump in for obtaining tax payer funded nuclear research. The players are not just Bill Gates's TerraPower. The players are X-energy, NuScale, Oklo, and others. All are getting government funding. All are getting access to tax payer funded DOE labs.

With all the mania for any and every type of new nuclear reactor, oddly there is no similar enthusiasm for solving the nation's growing spent nuclear fuel disposal problem.

The Department of Energy is on track to miss the most important Idaho Settlement Agreement milestones, that of repackaging and shipping spent nuclear fuel at the INL to a disposal facility. There not only is no disposal facility, there is no program to obtain a disposal facility. And the costs of one or two disposal facilities are too obscene for the US Senate or House to discuss.

It should be of interest to note that the TRISO fuel touted by X-energy is similar to that of the failed Fort St. Vrain nuclear plant in Colorado. In just one year of storage of that TRISO spent fuel, it cost the US tax payer about $11 million dollars. We've been storing that fuel since 1989. The packaging of Fort St Vrain fuel for disposal is still not developed but is extra costly due to the high fissile content of the fuel.

These nuclear developers who spoke today don't have to pay for managing and disposing of the spent fuel they generate. The tax payers will. And the LINE commission is not advocating for

citizens or tax payers – it is only to advocate for these nuclear developers and for the INL, which is terribly irresponsible.

The INL gave up spent nuclear fuel disposal packaging and disposal programs and became focused only on new nuclear technology promotion. These technologies are making more waste that future generations will have to deal with. It remains unclear in their NEPA documents how much of the test materials will be disposed of over the Snake River Plain aquifer.

With so many MIT grads speaking today, I was reminded that it was MIT that was claiming years ago that the nuclear industry now knew how to control costs with the Westinghouse AP1000 plants were proposed. These plants, which MIT graduates claimed would be constructed with costs under control have certainly not been constructed with costs under control and numerous bankruptcy's have resulted.

But the MIT grads at today's meeting were making the same claims for the future. Most unsubstantiated claims that they would modularize, and control nuclear build costs.

The speakers were enthusiastic. And well educated. And the LINE Commission appeared to easily ingest the many claims, such as being "safe" and "affordable" no matter how many disadvantages the various designs also embody.

With Senator Mike Crapo's concern over U.S. government spending, it is especially concerning that he ignores the costs of this no-reactor-left-behind approach and ignores the cost of attempting to confine the spent nuclear fuel from the environment.

Also concerning were NuScale's mischaracterization of its NRC design approval for its proposed small modular reactor. The US Nuclear Regulatory Commission licensing board, which included INL employees, did conclude its license review one month earlier than scheduled, but not because the review had actually finished. The NRC licensing board left many issues unresolved and specially stated that further NRC licensing approval was not a given.

The LINE Commission, seeking to reduce regulatory licensing impediments, is irresponsible and shows a complete lack of due concern for the severe consequences of a reactor accident. The NRC has already touted to the LINE commission that they are employing more former DOE officials. The NRC is already failing to conduct impartial and thorough licensing reviews. The consequence will be unsafe reactors and future reactor accidents that evacuate people and put farmland out of service. The NRC has been putting nuclear provider profits over safety for years. And it should be noted that the NRC plays no role in assuring cost control nor for assuring compatibility with nuclear fuel disposal concepts.

There is no acknowledgement that the recycling of EBR-II fuel to make high-assay-low-enriched-fuel (HALEU) is releasing 170 times the typical amount of airborne radiological releases to Idaho skies.

There is no acknowledgment that radioactive activation products from the Advanced Test Reactor are found in yellow-bellied marmots in Pocatello, yet attributed to former nuclear

weapons testing even when the short-lived radionuclides can only have come from recent ATR operations.

In LINE Commission meetings, there is no acknowledgement of the harms and expenses of nuclear energy. Only greased fluff, largely not questioned, and with some on the LINE commission falling all over themselves to pressure for greased funding, reduced regulatory oversight and reduced laws, so that Bill Gates and others can make profits and then walk away from the mess, all while diverting scarce resources from the non-nuclear answers to our energy problems.

End of my comment submittal.

I am including additional information below that was not part of my comment submittal.

For additional information, see the Environmental Defense Institute website for the May and February 2021 newsletters at http://www.environmental-defense-institute.org/publications/News.21.May.pdf and at http://www.environmental-defense-institute.org/publications/News.21.Feb.pdf and other newsletters and public comment submittals at http://www.environmental-defense-institute.org

A rough summary of some of the currently proposed reactors is provided in Table 1.

Table 1. Summary of nuclear reactors currently receiving U.S. research dollars.

Reactor Category ***Reactor name***	**Reactor type/ Fuel type**	**MW-thermal**	**MW-electric**	**Fissile Material**	**Special notes**
Materials Testing *Versatile Test Reactor*	Fast neutron, sodium-cooled, U-Pu-Zr	300 MW-th	0	Uranium-plutonium-zirconium metal	Existing materials testing at the Advanced Test Reactor is 250 MW-thermal, thermal neutron, light-water cooled
Commercial electrical power TerraPower & GE Hitachi *Natrium*	Fast neutron, sodium-cooled, U-Zr	?	345 MWe	Uranium-zirconium-hydride using HALEU	
Commercial electrical power X-energy's	High-temperature gas cooled, TRISO	?	Xe-100, 80 MWe; 4-pack is 320 MWe	TRISO (tristructural isotropic) uranium fuel	TRISO fuel used in Fort St. Vrain reactor (but FSV used

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Xe-100				particles from HALEU	U-233 fissile material)
Commercial electrical power (Small Modular Reactor) *NuScale*	Light-water pressurized reactor, standard PWR fuel with MOX and other fuels envisioned	?	NuScale 50 MWe (hopes to amend license to 60 MW); 12-pack 720 MWe	<4.95 percent enriched standard PWR fuel, hope to use plutonium mixed oxide fuel (MOX) and/or higher enrichment fuels	
Mobile reactors	Variety	?	< 20 MWe	variety	Wide range of sizes and accident consequences
	Project Pele, BWXT Advanced Technologies, LLC,		1 to 5 MWe		Department of Defense
	Project Pele, X-energy, LLC, high temperature gas cooled		1 to 5 MWe		Department of Defense
	Oklo, a $25-million startup company		1.5 MWe	HALEU	Department of Energy
	Ultra Safe Nuclear Corporation (USNC), gas-cooled reactor demonstration project		5 MWe		Canada at Ontario's Chalk River site
	Westinghouse Canada eVinci Micro Reactor		1 MWe to 5 MWe		
Micro *MARVEL*	Sodium-potassium-cooled, HALEU	100 kW-th	"less than 100 kWe"	150 kg of 20 percent enriched U-235 (U-Zr-Hydride fuel in	Testing planned at INL's TREAT facility

Reactor Category *Reactor name*	Reactor type/ Fuel type	MW-thermal	MW-electric	Fissile Material	Special notes
			Expect 20 kWe (0.02 MWe)	stainless-steel cladding	

Table notes: MW-th is megawatts-thermal energy, MWe or simply MW is megawatts-electric energy. HALEU is high assay low-enriched uranium, produced by the Idaho National Laboratory in a highly environmentally airborne polluting pyroprocessing operation. Note regarding past, current or under construction reactors: the nominally 1000 MWe Westinghouse AP1000 under construction is a light-water pressurized reactor, 1000 MWe, fuel of uranium oxide of 4.55 percent uranium-235 enrichment; existing Advanced Test Reactor, 250 MW-thermal, 93 percent enriched uranium-235; formerly operated Fort St. Vrain high-temperature gas-cooled reactor, 330 MWe, used TRISO fuel; formerly operated Peach Bottom reactor, 40 MWe; formerly operated Hanford's Fast Flux Test Facility reactor was a 400 MW-thermal fast neutron sodium-cooled reactor; formerly operated INL's Experimental Breeder Reactor II (EBR-II) was a fast neutron sodium-cooled pool-type reactor of 62.5 MW-thermal (19 MWe), see Perry et al., Seventeen Years of LMFBR Experience: Experimental Breeder Reactor II (EBR-II), CONF-820465—2, April 1982 at https://www.osti.gov/servlets/purl/6534205 .