

Keith Ammon

From: Ryan Duncan <rduncan@lastenergy.com>
Sent: Thursday, September 21, 2023 9:02
To: Keith Ammon
Subject: Re: Invitation to Present to State Nuclear Study Commission

Caution! This message was sent from outside your organization.

Keith,

Thank you for the opportunity to present to your commission. I hope the information was helpful as your state continues to study nuclear energy.

You had asked a question about the cooling of our nuclear core. Below is a question, and answer, we have provided others when discussing this topic. Hope this sheds more light on the topic. If you have any other questions, please don't hesitate to ask.

What systems and design features does Last Energy have in place to promote safety and avoid meltdown?

The PWR-20's passive safety critical systems are housed within a robust and secure containment, enabling the power plant to withstand external events while facilitating a safe and controlled shutdown should the need arise. All safety activities, encompassing organizational, behavioral, and equipment-related aspects, are supported by multiple layers of overlapping provisions, aimed at preventing harm to individuals or the environment. These features are aligned with the International Atomic Energy Agency's (IAEA) Defense in Depth principle, which forms the foundation of the PWR-20 design.

Furthermore, the small scale of the PWR-20 compared to other nuclear power plants provides an opportunity to incorporate safeguards that are not practical in larger designs.

One such safety measure is indefinite passive cooling, enabled by low power densities and high surface to volume ratios that enable natural circulation of emergency coolant.

Furthermore, the design and construction of a robust, leak-tight, underground containment that prevents radiological releases in virtually all circumstances is reasonable and cost-effective. The containment is designed, and will be tested, for the pressure and temperature expected from an instantaneous rupture and flash of the entire primary loop coolant inventory. In the event of a Large Break Loss of Coolant Accident (LOCA), the sealed containment that will surround each reactor and associated NSSS equipment will both disperse heat and act as a bioshield in the event of any abnormal operation.

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