

Utah Energy Research Board Meeting Minutes

Date: November 12, 2025

Time: 10:00am

Location: Google Meet (Virtual) Utah San Rafael Energy Lab - 800 North Coal Haul Rd, Orangeville, Ut 84537

Recording Title: Utah Energy Research Board Meeting - 2025/11/12 10:00am - Recording

I. Call to Order and Administrative

- **Call to Order:** The meeting was called to order by Emy Lesofski.
- **Quorum:** Quorum was established with board members present.
- **Approval of Previous Minutes:**
 - **Motion:** A motion was made to approve the minutes from the last meeting (Stephen Ellis).
 - **Second:** The motion was seconded (Todd Combs).
 - **Vote:** The motion passed **unanimously**.

II. Utah Energy Research Lab (UERL) Update

Presenter: Dr. Jaron Wallace (USREL Representative)

Dr. Jaron Wallace provided an overview of the lab's applied research and development projects, which support the state's energy industry and inform policymakers.

Natura Resources: They are actively partnering to develop and qualify their fuel salt for molten salt reactors. Leasing of both Labs. Future Rental of High Bay Space. Timeline: is Ongoing.

Valar Atomics: They are underway with building a 250kW high temperature gas reactor on site. Broke Ground on Sep 11th, 2025. Timeline: The lease is 3 years. Can be ongoing.

Lithium-Ion Battery Recycling: A DOE funded project with Reaction Engineering International (REI), BYU and MIT to explore the recycling of consumer electronic batteries. Furnace upgrades in progress. Timeline: Is ongoing.

Coal Communities: A DOE funded project with University of Utah to explore technical and economic pathways for replacing coal power plants in Emery County. We have hired two Interns. One Post Doc Position Starting January 2026. Timeline: Project Ends June 2026.

L1500 Upgrades: Funded under DOE and private partnerships the L1500 coal furnace will be upgraded to facilitate future testing. Hiring One full time staff to manage incoming projects and

upgrades. Valar Atomics and Natura Resources would like to both use the L1500 in their projects. Timeline: Is ongoing.

SEM/FIB: DOE grant which funded the purchase of and training for a scanning electron microscope with a focused ion beam. 200 staff hours allocated to training and development. Timeline: Ongoing

NuCube: Active MOU and multiple grant applications with the eventual goal of a fueled test nuclear reactor on site. Act planning on the next steps. Future reactor sitting at USREL. Timeline: Ongoing

CDSP Grant: DOE funded hydrogen studies with OxEon Energy and desalination studies with Altris. Timeline: Ongoing

Future Projects:

Seerstone Development: Plans to build out a commercial test unit for low emission graphite production from CO₂ at USREL

Site Preparation: Development of the site including leveling ground, installing fencing, paving parking lots, and building upgrades.

Nusano & Natura: Nusano and Natura have partnered to create a fuel synthesis line at USREL for HALEU.

John O'Neil asked the question on how many staff will be trained on the microscope? 1 on the lead and 1-2 other staff.

Larry Howell asked what is your intended usage with the SEM? We paid for a 5 years of service contract. For the next five years we shouldn't have anything but a consumable cost for the microscope.

Mason Baker asked if the standard used for Valor Atomics to return the site to a "Greenfield State" would be used for any private party? The contract requires whatever financial assurance is needed under the DOE pilot program, and it's an ongoing discussion, especially concerning the HALEU program and Utah's Department of Environmental Quality requirements.

III. Financial Overview

Presenter: Debi Carty (OED Finance Director)

Debi Carty provided a financial summary for the UERL (focusing on the Lab, which the Board oversees) and a brief update on the Institute.

A. Utah San Rafael Energy Lab (USREL) Finances

Appropriations: \$1.2 Million - \$1.2 million, received in quarterly increments. As of the end of the first quarter (9/30), \$314,000 has been received.

Fund Balance: \$1.7 Million - Money that carries over from year to year.

Rentals: \$29,000 - Valar \$71,000 - Natura - Monthly payments for rental.

Expenses: \$1.2 million - Includes operating expenses.

Grants: \$30,000 AND \$18,000 - These grants were awarded to BYU for research projects.

Steve Ellis: Ask if we had a breakdown of operation expenses for things such as marketing? Debi will provide that for them. Emy stated that we are open for discussion about how we can better publicize. Most of the operating expenses are payroll along with office supplies, power bill, and updates.

The Lab plans to end the fiscal year with a slight surplus to roll into the next budget.

B. Institute Update

Presenter: Dr. Jeremy Pearson- Institute Director

The Institute (a separate entity focused Utah University / INL partnership and research and accelerated energy commercialization) is currently working on five strategic pillars:

Dr. Jeremy Pearson is working with Dr. Laura Nelson and Logan from Idaho National Lab (INL) on a strategy document for the Institute, which will be passed to the board for review and feedback. The five strategic pillars are:

1. **Energy Generation:** Next generation nuclear and clean energy generation technologies. The Institute is looking for grants to help commercialize the technologies of partners like Valar and Natura.

2. **Supply Chain and Workforce Development:** Assisting groups like HiTech and Holtech with an NSF grant submission to start a training program in Utah for nuclear reactor refurbishing and other trades.

3. **Fuel Life Cycle:** Focusing on nuclear fuel life cycle, from fabrication and enrichment to recycling and waste management.

4. **Value Chains:** Including critical minerals, integrating energy to data centers, and decarbonizing industry with nuclear and geothermal heat. Logan from INL is working on a

proposal with University of Utah to develop a digital twin of their TRIGA reactor, which could aid partners like Valar or Radiant. Other proposals include a Pioneer proposal to improve design and licensing and reduce AI data center by 20%, a Beehive proposal on expanding digital twin capabilities to site reactors as data centers, and a Wasatch proposal on critical miners.

5. Integrated Energy Systems: Merging complex systems with advanced controls and balancing renewable energy, leveraging INL's expertise.

Nuclear Heat Applications: Dr. Pearson highlighted the value chain area of applying nuclear heat for uses other than electricity, such as Valar's interest in synfuel production and Natura's interest in desalination. The lab can assist these efforts by using its non-nuclear heat sources (the 1-megawatt coal furnace and 250-kilowatt induction furnace) as test beds to demonstrate processes like hydrogen and synthetic fuels production and desalination before a nuclear reactor is involved. Pearson mentioned a forthcoming ARPA funding program for nuclear heat projects, with tracks focusing on chemical reactors, heat exchangers, and digital twins. The Institute is positioned to apply for this funding in partnership with companies like Syntholene, OxEon, and Valar.

Used Nuclear Fuel Recycling: Dr. Pearson noted the renewed interest in recycling used nuclear fuel. The Lab previously submitted a \$6.5 million grant with Curio to develop their three stage recycling process. Nusano's plasma enrichment process could separate valuable isotopes from Curio's product. A separate grant application was submitted to demonstrate Nusano's technology at San Rafael Energy Lab for HALEU production for isotope separation from spent fuel recycling.

Dr. Pearson asked the board for feedback on how to help Nusano locate their HALEU production unit at the lab, as they are exploring other options. Many companies are looking at Oak Ridge due to significant state investment and incentive in Tennessee. Dr. Pearson argued that location of the cold tests at the San Rafael Lab would lay the foundation for Utah to host future commercial activity and strengthen partnership with INL. The recycling team at INL has expressed interest in offloading some of their work to the San Rafael Lab.

Institute Financial Update: Debi Carty provided a quick financial update on the Institute. The Institute received \$2.2 Million in appropriations this year, with \$200,000 for operating expenses and \$2 million available for matching funds to universities.

IV. Closing and Adjournment

- **Board Comment:** Stephen Ellis thanked Jaron Wallace and Debi Carty for the comprehensive update .
- **Adjournment:** The meeting was adjourned. The next quarterly meeting will be scheduled in three months.