Texas A&M Energy Institute

Lecture Series

TEXAS A&M UNIVERSITY
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Energy Research at Idaho National Laboratory:

Nuclear energy and integrated energy systems for the nation's low-carbon energy future

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Deputy Laboratory Director for Science and Technology and Chief Research Officer

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11:00 a.m. - 12:00 p.m.

Frederick E. Giesecke Engineering Research Building
Third Floor Conference Room and Zoom

Biography

Dr. Marianne Walck provides strategic leadership, direction and integration for research, science and technology at INL in her roles as deputy lab director for Science and Technology and chief research officer. She leads INL's Laboratory Directed Research and Development program, directs INL's interactions with DOE's Office of Science, and oversees INL's strategic interactions with universities. Walck joined INL in 2019.

She has more than 30 years of DOE national laboratory technical leadership experience, including technical program leadership, research leadership, and line, personnel and site management. Her prior experience includes 33 years at Sandia National Laboratories, concluding as vice president for both SNL's California laboratory and its Energy and Climate Program. Walck serves on several advisory boards for universities, national laboratories and technical institutes, including the Texas A&M Energy Institute and the U.S. Women in Nuclear Executive Advisory Council. Walck was named one of the Top 100 Women in Energy by the National Diversity Council in 2021.

She earned Ph.D. and M.S. degrees in geophysics from California Institute of Technology and a bachelor's degree in geology/physics from Hope College. She holds memberships in the American Geophysical Union, the Seismological Society of America, the Association for Women Geoscientists, the American Nuclear Society, Women in Nuclear, and the American Association for the Advancement of Science.

Abstract

As the nation moves toward a new paradigm for the low-carbon energy system of the future, the role of nuclear energy is at a turning point. The future system requires an integrated approach that uses all available sources to produce electricity, fuels, and heat for the full spectrum of applications, including commercial uses, buildings, and heavy-duty transportation.

The need for clean baseload power in this system is increasingly recognized, as grid-scale long-term energy storage is yet to be achieved. As the Department of Energy's nuclear energy R&D national laboratory, INL is taking a leadership role in developing and demonstrating innovative nuclear systems for the future that will provide clean electric power and high-grade heat for integrated energy systems, as well as small reactors that can provide application-specific power and heat.

The presentation will describe INL's initiatives and programs in nuclear power and in developing integrated energy systems for the nation's clean energy future.

INL Idaho National Laboratory