

LARRY MEEM MEMORIAL LECTURE
Frances M. Marshall
ATR Experiment Program, Idaho National Laboratory

Thursday April 16, 2009
Comfort Inn Monticello in Charlottesville, VA

[Directions](#)

"The Advanced Test Reactor and INL Nuclear Research Program"

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The Advanced Test Reactor (ATR), at the Idaho National Laboratory (INL), is one of the world's premier test reactors for providing the capability for studying the effects of intense neutron and gamma radiation on reactor materials and fuels. The physical configuration of the ATR enables reactor operation at different power levels to provide different testing conditions for multiple simultaneous experiments. The ATR is a pressurized light-water moderated and cooled, uranium metal fueled, beryllium reflected reactor with a maximum operating power of 250 MWth and peak thermal flux of $10E+15$ n/cm²-s. The combination of high flux and large test volumes provide unique testing opportunities. The current experiments in the ATR are for a variety of test sponsors (US and foreign governments, private researchers, and commercial companies), and support several national and international initiatives in new reactor research and materials development.

Ms. Marshall is currently the manager of the ATR Experiment Program at the Idaho National Laboratory, with responsibility for developing the irradiation experiments performed in the ATR. Most recently, Ms Marshall co-led the team to establish the ATR as a National Scientific User Facility (NSUF) and she continues to support execution of NSUF experiments. Ms Marshall earned a bachelor's degree in nuclear engineering from the University of Virginia, earned a master's degree in chemical engineering from the University of Idaho, and is a registered Professional Engineer. She held a reactor operator license on the UVA Reactor and worked in the commercial nuclear power industry as a startup and plant system engineer prior to coming to the INL in 1991.

At the INL, Ms. Marshall has supported and led projects in the areas of irradiation experiments, nuclear power plant engineering, regulatory support, power plant performance assessment, and probabilistic risk assessment for the U.S. Department of Energy and the Nuclear Regulatory Commission.