

Today's commercial nuclear fuels are more efficient than those of the past, which has reduced costs for utilities and their customers. To maintain safe storage at utility locations around the U.S., the industry and Nuclear Regulatory Commission need to better understand the physical and chemical characteristics of this high-efficiency fuel.

The two 100-pound samples proposed for Idaho research could help answer these important scientific questions. The nonprofit organization that runs Idaho National Laboratory has created an internationally-recognized nuclear energy laboratory ideally suited for this research.

But Idaho is not the only place in the country this research can be done, and other national labs are eager to attract this work. There is a real possibility that the industry and DOE could utilize other labs if issues around commercial fuel research shipments are not resolved.

As the nation's largest source of carbon-free, 24-7 electricity, nuclear energy is an important part of the solution to the nation's energy challenges.



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Frequently Asked Questions

What is the purpose of the research and what do you hope to learn?

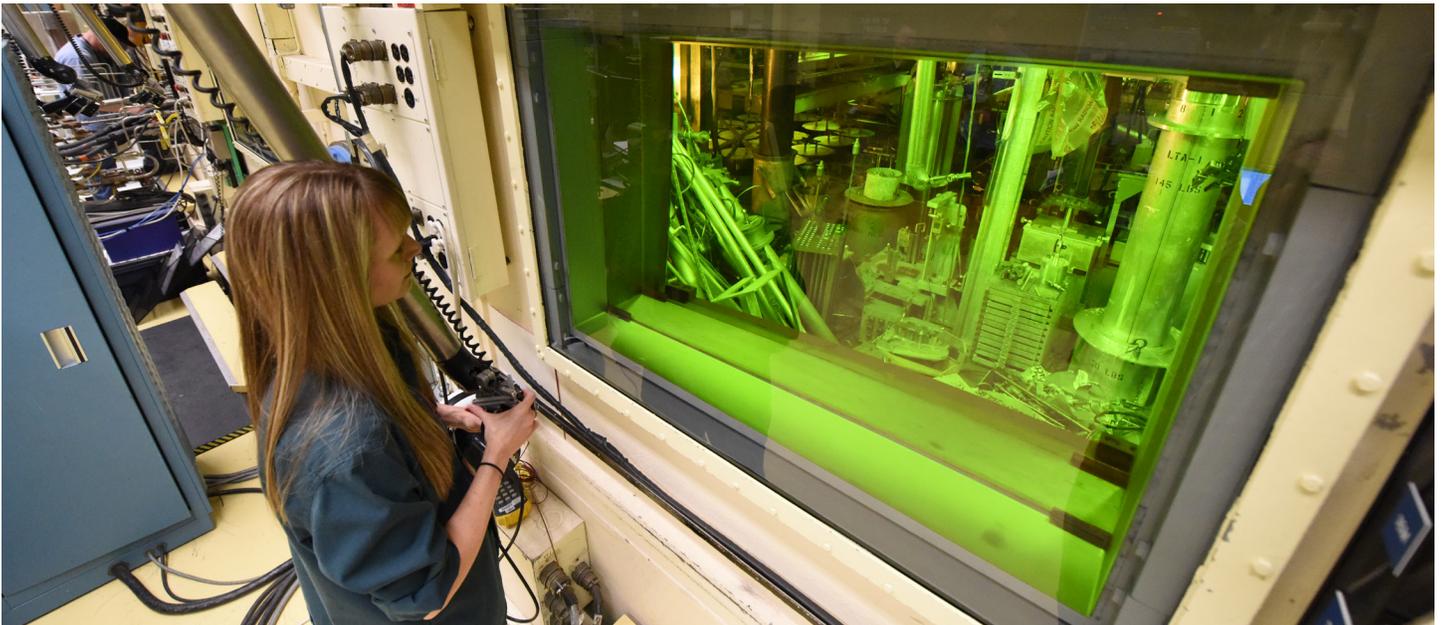
A Safe long-term storage of fuels from today's commercial nuclear reactors will require a better understanding of properties after fuel rods leave the reactor. The two 100-pound samples proposed for Idaho

research are carefully selected, modern, commercial reactor fuel pellets that have the right characteristics to help answer important scientific questions.

Why can't the research be done on fuel that's already here?

A Today's commercial nuclear fuels are more efficient than

those of the past, which has reduced costs for utilities and their customers. To maintain safe storage at utility locations around the U.S., the industry and NRC need to better understand the physical and chemical characteristics of this high-efficiency fuel. The fuel currently stored at INL does



INL scientists and engineers make nuclear energy safer by analyzing the physics and chemistry of nuclear fuels.

not have the same features as today's high-efficiency commercial fuel. The long-term storage of this fuel is well understood and does not present any safety concerns.

Doesn't the Settlement Agreement ban used nuclear fuel shipments to Idaho?

A No, the 1995 Settlement Agreement allows the Department of Energy to send 110,000 pounds of its used fuel to Idaho between 1995 and 2035. In 2011, Idaho and DOE agreed that research quantities of commercial fuel coming to INL for study would be counted against that total.

Doesn't the Settlement Agreement prevent commercial fuel coming to Idaho for storage?

A Yes, however this fuel would not come to Idaho primarily for storage purposes. It would be shipped to the state for critical research that INL is well-equipped to conduct.

Is Idaho at risk of becoming the nation's de facto spent fuel repository?

A No. The two 100-pound research samples are not "waste" that the Department of Energy or the industry are trying to get rid of. This material could help answer important scientific questions but the volume is insignificant compared to the existing inventory in Idaho (600,000 pounds) and nationally (150 million pounds). In March 2015, DOE announced plans to move forward with a consent-based approach for siting a repository for government-owned waste such as the used fuel currently stored in Idaho.

Can this research be done elsewhere?

A Yes, other national labs are eager to attract this important work. The nation has made considerable investments to build the unmatched research capabilities at

Will this threaten the aquifer?

A No. Contaminants being monitored to protect the aquifer were not created by used fuel stored at the site. They were created by disposal practices that are now prohibited and by operating practices that have been vastly improved. There are multiple barriers between this material and the aquifer, and there is no credible pathway for these materials to reach the aquifer.

INL, an internationally-recognized nuclear energy research, development and demonstration laboratory. Yet there is a real possibility that the industry and DOE could utilize other labs if issues around these shipments are not resolved.

The nation's spent fuel research laboratory

The nation has made considerable investments to build the unmatched research capabilities at INL. Rather than letting them sit idle, America should capitalize on those investments by performing this important research at the laboratory most qualified for the work.



State-of-the-art tools allow INL scientists to microscopically examine used nuclear fuel to understand how years of use have changed it.

Used fuel shipments by the numbers

2 Shipments

50 Fuel rods

4 Pounds per fuel rod

200 Total pounds of material

50 Years of experience in fuel research at INL

Understanding the Settlement Agreement

The 1995 Settlement Agreement required DOE to designate INL as the DOE Spent Fuel Lead Laboratory, which by definition requires INL to work with nuclear materials such as used fuel. The Agreement specifically allows for such shipments because the state recognized that INL's research mission was important and should continue as long as Settlement Agreement milestones were being met.