

# Introductory Course on Nuclear Nonproliferation and Safeguards

**Who:** Undergraduate and graduate students, early-career professionals, and others interested in building a foundation of knowledge in nonproliferation and safeguards

**What:** 5-day hands-on course on international nuclear safeguards

**Where:** PNNL Campus, Richland, WA

**When:** June 22-26, 2020

**Why:** To introduce students to the topics of nuclear nonproliferation and international safeguards

## COURSE OBJECTIVES

This course aims to provide participants with a fundamental understanding of the nuclear fuel cycle, the nuclear nonproliferation regime, international safeguards agreements and verification mechanisms including nondestructive assay techniques and equipment, destructive assay techniques, environmental sampling, and containment and surveillance.

## PARTICIPANTS

The Introductory Course is designed for undergraduate and graduate students, early-career professionals, and others interested in a greater understanding of international safeguards technologies and engagement with PNNL experts.



## COURSE STRUCTURE

This 5-day course will feature classroom seminars, hands-on exercises, and a tour of B Reactor National Historic Landmark. Below are the planned topics for the course. A final agenda will be provided to the students selected for the course.

- » **B Reactor:** Tour the world's first plutonium production reactor and learn about the history of the Manhattan Project.
- » **Nuclear Fuel Manufacturing Facility Tour:** Tour a modern nuclear fuel manufacturing facility with industry experts and learn the complexity of applying safeguards to these types of facilities
- » **Material Balance Area Kits:** Role play as an International Atomic Energy Agency (IAEA) inspector and conduct an on-sight inspection of a mock facility covered under IAEA safeguards.
- » **Environmental Sample Lab:** Learn the techniques safeguards inspectors use for taking and analyzing environmental samples in one of the IAEA's Network of Analytical Labs
- » **Capstone State Evaluation Exercise:** Learn the techniques the IAEA uses to evaluate a state's nuclear fuel cycle and implement safeguards.

### ABOUT PNNL

Located in southeastern Washington State, PNNL is a U.S. Department of Energy Office of Science laboratory that solves complex problems in energy, national security, and the environment, and advances scientific frontiers in the chemical, biological, materials, environmental, and computational sciences. With a team of approximately 4,400 staff, PNNL has an annual budget of nearly \$1 billion and has been proudly managed by Ohio-based Battelle since 1965.

[www.pnnl.gov](http://www.pnnl.gov)



## HOW TO APPLY

To apply, complete the registration form at <https://www.nonproliferationportal.com/>.

The application deadline is **May 1<sup>st</sup>, 2020**.

This course is FREE to participants who are accepted. Participants must fund their own travel and lodging.

For information about hotels, airports, and other information associated with traveling to Richland, visit: <http://www.pnnl.gov/contacts/visitors.asp>.

Send any questions with respect to logistics or course content to [SafeguardsCourse@pnnl.gov](mailto:SafeguardsCourse@pnnl.gov).

U.S. DEPARTMENT OF  
**ENERGY**

**NNSA**  
National Nuclear Security Administration