Pacific Northwest
NATIONAL LABORATORY

IAEA Safeguards:
From Theory to Practice

The National Nuclear Security Administration's Office of Nonproliferation and Arms Control Human Capital Development Subprogram is hosting an in-person training course for early- and mid-career professionals interested in a gaining a greater understanding of nonproliferation, international safeguards concepts and engagement with safeguards experts.

EVENT DETAILS

» **Who:** Early- and mid- career professionals who have a basic foundation of international safeguards and are seeking to increase the depth of their safeguards knowledge.

» **What:** 5-day activity-based course on applied international nuclear safeguards.

» **When:** May 12-16, 2025

» **Where:** Pacific Northwest National Laboratory, Richland, Washington

» **Why:** To bridge the gap between fundamental and advanced safeguards courses through an intermediate-focused applied safeguards course.

PREREQUISITES

1. Ability to describe international safeguards objectives and why are safeguards necessary.
2. Previous exposure to international safeguards, including but not limited to professional experience and/or safeguards-related courses.
3. Willingness to complete specified required reading and videos prior to the course.
4. Available to participate in pre-course briefing and have a basic understanding of international nuclear safeguards.

OBJECTIVES

At the completion of this course, participants will have a greater understanding of the following topics and be able to apply them in their future work activities:

1. Structure, content, hierarchy and evolution of documents associated with nuclear nonproliferation and international safeguards.
2. Discuss the provisions of the Treaty on the Non-proliferation of Nuclear Weapons (NPT)
3. Analyze a State's nuclear fuel cycle.
4. Analyze safeguards objectives and approaches.
5. Describe safeguards implementation at facilities (technologies, techniques, and equipment).
6. Describe the ongoing evaluation of all safeguards relevant information available to the IAEA about the State.

NPAC
Human Capital Development Program

Photos: PNNL HCD Program

COURSE STRUCTURE

This 5-day course features seminars, tabletop exercises, and other interactive group activities, such as those listed below.

- **Nuclear Fuel Cycle Mapping Exercise:** Identify relevant fuel cycle information from a draft state evaluation report, analyze the State's fuel cycle capabilities, and map facilities and nuclear material flow.
- **Design Information Verification:** Review operator declarations, verify facility design and layout, and analyze the data to confirm accuracy of the declaration.
- **Facility-Level Safeguards Implementation:** Perform a diversion pathway analysis to analyze proliferation/diversion pathways and establish and prioritize technical objectives. Identify key safeguards measures/activities for facility-level implementation and illustrate how these measures help verify operator records and systems.
- **State Evaluation**: Learn the techniques the International Atomic Energy Agency uses to evaluate a state's nuclear fuel cycle and implement safeguards. Participate in a State Evaluation Group and use tools and techniques to evaluate safeguards implementation.

COURSE PRE-BRIEFING

The course will involve several interactive exercises that will require selected participants to review read-ahead material related to the hypothetical facility. A mandatory pre-course briefing will provide participants with introductory information related to international safeguards to include: Introduction to Arms Control and Nonproliferation, IAEA Safeguards Overview, Introduction to Legal Basis of Safeguards and History of International Safeguards Engagement.

The mandatory pre-course briefing will be held on April 29, 2025, from 08:00-12:00 (PST). Participants are highly encouraged to attend to ensure they are prepared for the course content and interactive activities. Participants who cannot attend the briefing will be required to take and pass a knowledge test.

HOW TO APPLY

To apply, complete the registration form at https://nonproportal.energy.gov/

The application deadline is extended to **March 31, 2025**

This course has NO REGISTRATION FEE for selected participants. Participants will be responsible for their own travel arrangements and expenses (transportation, lodging, meals that are not provided during the course, etc.).

Send questions regarding logistics or course content to SafeguardsCourse@pnnl.gov.

ABOUT PNNL

Located in southeastern Washington State, PNNL is a U.S. Department of Energy Office of Science national 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 more than 5,700 staff, PNNL has an annual budget of nearly $1.5 billion and has been proudly operated by Battelle since 1965.

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