All Workshops are presented on Sunday, March 10th, various times:
Workshops are open to all attendees for an additional nominal fee. Simply log into your profile and select “Registration” and navigate through to Workshops.

All workshops are accredited for you to earn Continuing Education Units (CEUs) or Professional Development Hours for your professional certification or career development, see “Criteria to earn Continuing Education Units and Professional Development Hours” at the end of this page.

Workshop 1 Title: Transport Security of Nuclear and Other Radioactive Material
Time: 0800-1700 with breaks including lunch (provided)
Room: 228AB

Since 2013, the U.S. Department of Energy (DOE) Packaging Certification Program (PCP), Office of Packaging and Transportation, Office of Environmental Management has sponsored six week-long training courses conducted by Argonne National Laboratory. These training courses are part of the DOE Packaging University Program with the University of Nevada Reno (UNR) that offers two Graduate Certificates in Nuclear Packaging (GCNP) and in Transport Security and Safeguards (GCTSS). Among the six training courses are the security during U.S. domestic and international transport of nuclear and other radioactive materials and transport emergency response. The objective of the transport security courses is to help students gain a detailed working knowledge and understanding of international and U.S. domestic requirements, respectively, recommendations, and guidelines for security during the transport of nuclear and other radioactive materials via all modes of transport. More specifically, the international transport security course addresses the recommendations and guidance from the International Atomic Energy Agency (IAEA) and the international requirements and recommendations from relevant international and regional modal transport organizations. The U.S. domestic transport security course addresses the requirements of U.S. government agencies. Both courses provide guidance on how to develop transport security systems by following a graded approach and applying modern technologies; how to develop transport security plans (TSPs) that satisfy security requirements; how to apply rules of engagement for escort, guard force, and emergency response personnel; and how to communicate with stakeholders and the public during emergencies, among other topics. Both courses incorporate hands-on exercises involving TSPs, readiness reviews, corrective actions, and audience participation to enhance dialogue; and a field exercise using the ARG-US remote monitoring systems to track a mock shipment with “staged incidents.” Both courses also make extensive use of tabletop exercises to facilitate learning through role-playing, discussions, and group reports. Virtual Reality (VR) tools are being used to design various scenarios for class exercises in the transport emergency response course since 2022.

In this workshop we provide key elements and highlights of the transport security and emergency response courses. The emphasis will be on the U.S. regulations and IAEA requirements, recommendations, and guidance documents, and the associated international and regional modal regulatory documents. In addition, the workshop will provide an overview of technologies that help prevent, deter, delay, detect, and respond to transport security incidents, including the ARG-US remote tracking and monitoring systems, and the Nuclear Material Transport Planning Tool (NMTPT), which is a web-based apps for automated categorization of nuclear and other radioactive material and generation of TSPs with security provisions that meet the international and U.S.-domestic regulatory requirements.

Learning Objectives:
1. Explain the need for security during transport of nuclear and other radioactive material.
2. Demonstrate working knowledge of U.S. and international regulations and associated recommendations specifying security measures during the transport of nuclear and other radioactive material.
3. Describe how local law enforcement agencies should be utilized to provide security during transport.
4. Describe transport security plans (TSP), readiness reviews and corrective actions to ensure implementation of security measures prior to shipment; and
5. Identify technologies that can be used to enhance transport security.

**Prerequisites:**
No pre-requisites are required relative to learning topic prior to attendance.

**Instructors:**
The workshop will be led by subject matter experts from Argonne National Laboratory who developed and taught the transport security and emergency response training courses as part of the DOE Packaging University program since 2015.

**Professional Development Hour value:** 7.5 PDHs  
**Accredited Continuing Education Unit value:** .8 CEUs

**Workshop 2 Title:** Importance and Guidance for Application of Software Quality Assurance (SQA) practices for NQA-1 and DOE O 414.1D  
**Time:** 1100-1600, afternoon snacks will be provided.  
**Room:** 226BC

Description: Companies in the DOE Complex are tasked to implement software quality assurance programs that are typically driven by a) a selected version of NQA-1/Subpart 2.7 for all software and coupled with b) DOE O 414.1D and the Safe-Harbor Guide especially for safety software. Procedural flow down to the implementing software engineering teams, especially for Plant Installed Information Technologies (IT) and Operational Technologies (OT) software systems are generally sufficient. However, there is also leeway in the procedure layer for implementation of a software lifecycle process and its phases that can actually lead to inconsistent practices. If procedures are not aligned carefully with the requirements of NQA-1 and the DOE O, a team can inadvertently implement a solution that leads to the identification of Adverse Conditions (AC) (read: findings) during internal or client surveillance in one or more software lifecycle (SLC) phases and/or activities. In fact, some software engineers view validation as being for end product application testing alone, whereas a disciplined software engineering SQA approach relies on validation and verification (v&v) for each phase of the SLC process, and not just development, and with proper independent reviews and configuration control. In a Company that has several small software teams, the potential for divergent SQA practices due to the freedom of procedural implementation is present but is certainly not recommended.

Historically, IT and OT teams work in small groups utilizing newer software lifecycle (SLC) techniques such as Agile Scrum and Rapid Prototyping Vortex, as alternatives to the classic waterfall method for SLC. Even with small teams implementing with these techniques, and under compliant SQA plans and procedures, it is apparent (by direct experience and technical evolution of thirty-plus years) that software engineers, while aware of the need for Software Quality Assurance (SQA), are not exactly sure of a) the importance of the SQA activity, and b) how to fill in the 'gaps' where procedures may leave those items up to them and/or their project lead to solve directly.

A solution for the first of these two items is an educational process to crosswalk and address the main points of NQA-1 and why it is important to have the SQA activity and practices in place and to provide a pragmatic overview for Plant Installed software. And then provide a high-level correlation exercise from the SQA SLC phases, activities and tasks to the appropriate sections of NQA-1/subpart 2.7 and the DOE O 414.1D. The second solution is to address the potential 'gaps' through a free flow of pragmatic, directed implementation guidance from the authors' experiences, to Project Leads and Software Engineers that may be wondering both why they need SQA and how to address these gap areas.

**Learning Objectives:**
1. Explain how ASME NQA-1 applies to computer software such as custom developed software such as that found in web applications and digital instrumentation and control systems
2. Demonstrate the ability to name the key components in a software lifecycle controlled by NQA-1
3. Provide feedback on how these application techniques can apply to your current software processes

Prerequisites:
Participants should have a general understanding of the software development life cycle and quality assurance process.

Instructors:
Darryl Brayton, P.E., InfoTech NorthStar
Nolan Wright, P.E., Theseus QA.

Professional Development Hour value: 4.5 PDHs
Accredited Continuing Education Unit value: .5 CEUs

Workshop 3 Title: Unlock the Secrets of Nuclear Engineering and Hanford's Legacy!
Time: 0930-1600, with breaks including lunch (provided)
Room: 225AB

Description: Join us for a comprehensive workshop that explores the fascinating world of nuclear engineering while focusing on the intriguing history of Hanford's nuclear waste. This workshop offers a deep dive into the essential aspects of nuclear engineering and waste management, ensuring you leave with a solid understanding of the subject matter.

This workshop is designed for those seeking a deeper understanding of nuclear engineering and waste management, with a specific emphasis on Hanford's unique challenges. You'll engage with industry experts, participate in meaningful discussions, and foster valuable connections.

By the end of the workshop, you'll emerge with a comprehensive grasp of nuclear power generation, waste management intricacies, and the latest advancements in the field. Armed with this knowledge, you'll be better prepared to tackle complex tasks in nuclear engineering and waste management, contributing to a safer and more sustainable nuclear future. Don't miss this opportunity to increase your nuclear engineering literacy.

Learning Objectives:
1. Hanford Waste Knowledge: By the end of this workshop, participants will be able to recall and describe the historical context of Hanford waste, outlining the significant technical issues associated with radioactive waste management at the site.
2. Nuclear Engineering Fundamentals: After completing the workshop, participants will demonstrate an understanding of fundamental nuclear engineering concepts, such as the differences between Pressurized Water Reactors (PWR) and Boiling Water Reactors (BWR), and their respective roles in nuclear power generation.
3. Radiation Protection and Shielding Application: Through interactive discussions and case studies, attendees will be able to apply radiation protection principles and shielding strategies to devise effective measures for safeguarding personnel and the environment from radiation exposure in nuclear facilities.
4. Analysis of National Technical Means: Participants will analyze and evaluate national technical means utilized in monitoring and managing nuclear activities worldwide. They will assess the importance of international collaboration and the impact of these resources on enhancing nuclear safety.

Prerequisites:
There are no course prerequisites.
Target Audience:
Student attendees and early career professionals will find this course particularly helpful. This course is general enough that any professional will find it informative.

Instructors:
Dr. Douglas Reid, Engineer / Technology Integration Project Manager, Washington River Protection Solutions

Professional Development Hour value: 6 PDHs
Accredited Continuing Education Unit value: .6 CEUs

Workshop 4 Title: US EPA Superfund Radiation Dose Assessment
Time: 0800-1700 with breaks including lunch (provided)
Room: 227C
The US EPA Superfund Radiation Dose Assessment course is an interactive, full-day advanced program that addresses specific technical and regulatory challenges faced by site managers (e.g., Regional Project Managers, On-scene Coordinators) and technical staff (e.g., risk assessors, health physicists) involved in managing sites within the US Environmental Protection Agency's Superfund remedial program. While the focus of Superfund assessments is usually risk, this special edition of this course will focus on the dose assessment calculators which are used by EPA for determining compliance with dose based Applicable or Relevant and Appropriate Requirements (ARARs).

Course Highlights:
• Interactive Learning: The course is designed to actively engage participants in discussions and practical exercises to reinforce learning.
• Comprehensive Content: Topics covered include identifying land uses at a site, screening contaminants, and conducting risk assessments for radioactive materials.
• Hands-on Practice: Multiple practice sessions are included at the end of the course to reinforce the functions of the provided calculators and the concepts covered. These sessions involve mini risk assessment problems that encompass data screening and cancer risk calculations.

Learning Objectives:
By participating in this course, attendees will achieve the following objectives:
• Step-by-Step Approach: Learn a systematic approach to the Superfund remedial program's risk assessment process for radioactive contamination. This includes discussions on major steps (data assessment, exposure assessment, toxicity assessment, and risk characterization), recommended EPA guidance documents, and the use of calculators/models for conducting risk assessments.
• Site-Specific Assessments: Explore methods for conducting site-specific risk assessments, including adjusting default input parameters in the Superfund remedial program's risk and dose assessment calculators. The course also covers conducting uncertainty analyses to identify exposure parameters with the most significant impact.
• Practical Recommendations: Discover practical recommendations for enhancing radiation risk assessments, ensuring they align with chemical risk assessments. The course highlights both obvious and less apparent aspects that can improve the radiation risk assessment process.

Calculator Coverage:
The course provides in-depth coverage of various EPA calculators, including:
• Dose Compliance Concentration (DCC) Calculator for assessing radionuclide dose for soil, water, and air.
• Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites electronic calculator for uranium noncancer risk.
• BDCC Calculator for radionuclide dose inside buildings.
• BPRG Calculator for radionuclide cancer risk inside buildings.
• SDCC Calculator for radionuclide dose for hard outside surfaces.
• SPRG Calculator to assess radionuclide cancer risk for hard outside surfaces.
• Radon Vapor Intrusion Screening Level (RVISL) Calculator.
• Vapor Intrusion Screening Levels (VISL) Calculator for chemicals.

Instructors:
Stuart Walker, EPA Office of Superfund Remediation and Technology Innovation (Instructor) Fred Dolislager, The University of Tennessee and Oak Ridge National Laboratory (Instructor)

Instructional Methodology
The course's instructional methodology includes lectures and demonstrations that utilize EPA's risk and dose assessment calculators developed by the Superfund remedial program.

Target Audience:
This course is designed for site managers, risk assessors, and individuals seeking a practical understanding of Superfund radiation risk assessments.
Participants are strongly encouraged to bring a laptop to fully engage in the instruction.

Professional Development Hour value: 7.5 PDHs
Accredited Continuing Education Unit value: .8 CEUs

Criteria to earn Continuing Education Units and Professional Development Units:

Continuing Education Units: Learners must be registered to attend, check-in prior to the learning event starting and stay the duration of the learning event (all workshops and technical sessions vary in length). Learners must also pass the learning event assessment with a 70% and complete the course evaluation at the end.