

Course Description

Designed by experts for personnel who are responsible for radiochemistry and unit chemistry activities, this course delivers practical, hands-on learning and proven techniques. Through this course, students develop a fundamental understanding of radiochemistry fundamentals, instrumentation and software functions, effective review of gamma spectroscopy data and reports, nuclide decay study protocol and results, and the relative importance of these elements. Training materials and activities are expertly designed to support, strengthen, and increase the knowledge and proficiency of program owners as well as align fleet program owners on the basis and implementation of a program.

Course Information

- Course duration is five days
- Detailed course handbooks will be provided upon arrival
- Attendees are encouraged to bring plant data for group discussion and analysis.

Course Topics

- ✓ Using the Chart of the Nuclides
- ✓ Definition of key terms
- ✓ Interactions of gamma rays with matter
- ✓ Radioactive decay and associated equations
- ✓ Instrument calibration, system components and detection interactions
- ✓ Discussion on software algorithms
- ✓ Activity, background and delayed counting
- ✓ Chemistry of nuclear power plant operations
- ✓ Reactor coolant radioactivity
- ✓ Fuel performance monitoring
- ✓ Gamma spectrometry data review
- ✓ Tools and techniques for identification of unidentified peaks
- ✓ Eliminating radionuclides or gamma rays from a gamma spectrum analysis based on knowledge of the sample & when it was taken
- ✓ Parent-progeny relationships and how they can affect the activity concentration measured for the progeny radionuclide
- ✓ Rejected peak evaluation
- ✓ Examples of data review issues
- ✓ Value and application of an effective decay study

