



**Course Outline/Syllabus for
APNGA Online Portable Nuclear Gauge Safety Course**
(Approved and accepted in all 50 states)

Total Course and Certification Training Time: 6-8 hours

Total time includes video lessons plus practice test, certification exam, answer review, and RSO and company-specific training with RSO including:

- Gauge model introduction, gauge operations and company specific methodology
- Licensee/company specific operations procedures coverage and document
- Licensee/company specific emergency procedures coverage and document
- Licensee specific storage introduction and procedures
- Licensee transportation procedures
- Licensee worksite procedures

Course Training Segments:

Lesson 1- Intro

Regulatory Body, Authorized Training, Authorized Users, Training Manual and Website

Lesson 2- Senior Management

Sr Management Commitment, ALARA Philosophy, Worker Commitment

Lesson 3- Radiation Safety Officer (RSO)

Lesson 4- Gauges

Anatomy of a Gauge, Gauge Intro, Double Encapsulation Shielding, Gauge Safety Record

Lesson 5- Radiation Basics

Atoms, Elements, Isotopes, Periodic Table, Mass Numbers and Stable Elements, Isotopes and Radioactivity, Radioactive Sources in the Gauge, Contamination, Decay, Radiation, Alpha and Beta Radiation, Gamma Radiation, Neutron Radiation, Neutron Thermalization, Measuring Moisture, Measuring Density, Decay and Half-Life, Ionizing Radiation, Measuring Radiation, SI Units, Radiation Physiology, Background vs. Occupational Exposure, Measuring Exposure, Dose Equivalent, External Exposures, Internal Exposures, Chronic Exposures, Acute Exposures, Harmful Effects of Acute Exposures, Occupational Exposure Limits, Annual Exposure Amounts, ALARA, Shielding, Time, Containment, Distance, Inverse Square Law, Personnel Monitors, Personnel Dosimetry, Dosimetry Rules, Leak Tests, Inventory, Radiation Survey Meters

Lesson 6- Agencies

Agencies, Licensing, Regulations, Recordkeeping, Your License, Specific License, Enforcement, Radiation Safety Officer, RSO Responsibilities

Lesson 7- Radiation Safety Program

Gauge Operating Procedures, Gauge Emergency Procedures, Workplace and Jobsite, Transportation, Surveillance

Lesson 8- Annual Audit

Lesson 9- Storage and Security

Security and Surveillance, Shielding, Boundaries, Capacity and Control, Temporary Storage, Service and Repair Providers, Reciprocity

Lesson 10- Gauge Disposal and Transfer

Lesson 11- Decommissioning/Terminating Your License

Lesson 12- Inspections

Lesson 13- USDOT HAZMAT Training

General Awareness, Special Formed Sealed Sources, Certificate of Competent Authority, Function-Specific Training, HAZMAT Employees, Safety Training, ALARA, Operating Procedures, Security and Storage, Checklists, Handling, Gauge Case, HAZMAT Risks, Transporting Gauges, Regulations, Recordkeeping, Training Requirements, 49 CFR Regulations, Shipping Modes, Shipper Responsibilities, Type "A", Class 7 Radioactive Materials, Communications, Labels, Markings, Yellow Radioactive II, Paperwork and Documents, Emergency Response Sheet, Ground/Air Transport Requirements, Shipper Certification Statement, Overpacks, Improperly Prepared Packages, Placards, Transportation Security, Tamper Evident Seals, Tunnel and Bridge Restrictions, Driving and Parking Rules, Reciprocity, Temporary Storage, Damage During Transport, Reportable Incidents, Incidents/Accidents, Radioactive Substances, USDOT Inspections and Fines, Return to Inventory, Document Retention

Lesson 14- Gauge Operations and Maintenance

Manufacturers, Standard Counts, Calibration, Data Entry, Soils, Standards, Measuring Moisture, Measuring Density, Back Scatter, Gauge Placement, Asphalt, Cleaning, Gauge Inspection, Leak Testing, Source Rod Cavity and Sliding Block, Daily and Weekly Maintenance

Lesson 15- Practice Test and Certification Exam

30 Variable/Random Question Practice Test (required) can be taken as much as needed. 30-Question Certification Exam (can be retaken until passed).