



M&A Safety Services

512 Viaulet Road
Youngsville, Louisiana 70592
Main: 337-451-4685
Fax: 337-451-5847
www.masafetyservices.com

NORM Surveyor

Course Outline

Prerequisites: This course shall have no formal pre-requisite although it is recommended that the delegate complete a NORM Worker course.

Course Length: 6-8 hours – Course length shall vary depending on the number of delegates. Total course time includes breaks.

Class Size: The maximum number of delegates that may be trained and tested per instructor shall be thirty-five (35) in the classroom session and twenty (20) in the practical session. A second instructor shall be added for the practical session once the participation exceeds twenty (20).

Course Objective

-) Provide delegates assigned to work with or around NORM the necessary skills to safely perform their jobs.
-) Provide delegates with recommended practices and guidelines to perform safely while working with and surveying NORM.
-) Delegates should be able to demonstrate the necessary skills during practical examination and demonstrate knowledge during written examination.

Course Design

-) Power Point© / Lecture / Audio Video / Visual Aids
-) Practical Exercises

Successful Course Completion

-) Requires a minimum score of 75% or better.
-) Grades shall be calculated by dividing the number of questions answered correctly by the total number of exam questions.
-) Delegates will have no more than thirty (30) minutes to complete the exam.
-) Successful completion of practical session is mandatory.

Course Content Summary

-) Classroom
-) Practicals

Breaks – 5 to 10 minutes (approximately every hour)

Lunch – 1 Hour



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Course Outline

Survey Instruments

-) Basic Radiation Detectors
-) Detector Types
 - o Scintillation Detectors
 - o Gas Filled Detectors
-) Ludlum (Geiger/Mueller) Meter
-) Meter Attachments
 - o Probe Attachment
 - o Pancake Attachment
-) Detection Equipment Used at your Facility
-) Calibration Requirements
-) Pre-operational Checks
 - o Physical
 - o Battery
 - o Response to a Source
 - o Calibration
-) Operational Check Example

Units of Measure

-) Modifying Units of Measure
 - o Milli
 - o Micro
 - o Nano
 - o Pico
-) How we Report
-) Measurement Terms for NORM Detection
 - o Roentgen
 - o Micro Roentgen
 - o Curie
 - o Picocurie
 - o Micro Roentgen per hour
 - o Counts Per Minute (CPM)

NORM Legal Limits

-) Federal NORM Regulations
-) State NORM Regulations
 - o Louisiana DEQ
-) Equipment & Tubular Limits
-) NORM Waste Limits
-) NORM Land Limits



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-) NORM Wash & Rinse Water Limits
- NORM Surveying
 -) Radiation Surveys
 -) Survey Documentation
 -) Radiation Survey Job Classification
 -) Radioactive Contamination
 - o Loose Contamination
 - o Fixed Contamination
 -) Survey Map Example
 -) Sampling for NORM
 - o Soils & Land
 - o Liquid & Sludge
 -) General Considerations when Performing Radiation Surveys
 -) Checking a Person for Radioactive Contamination
 -) Frisking Procedures

Signs & Labels

-) NORM Container Markings
-) Postings in NORM Areas
 - o Restricted Areas
 - o Radiation Areas
 - o Stored Material Areas
 - o Airborne Radiation Areas
 - o High Radiation Areas
-) Establish Safe Work Boundaries

Personal Protective Equipment

-) Discuss Common PPE
 - o Gloves
 - o Respirators
 - o Safety Glasses/Face Shields
 - o Coveralls/Disposable Clothing
 - o Rubber Boots
 - o Hard Hats
-) Discuss Techniques:
 - o Proper Fit
 - o Condition
 - o Nature of Work
 - o Donning PPE
 - o Removing PPE (Potentially Contaminated)



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Practical Session:

Practical training shall utilize a Survey Meter similar to the type the employee will utilize in the field and a response source.

Practical shall verify the following:

- Select and wear appropriate PPE during practical training
- Perform proper pre-use physical integrity check of survey meter
- Perform proper pre-use battery check of survey meter
- Perform proper pre-use source response check of survey meter
- Perform proper pre-use calibration check of survey meter
- Correctly measure and report sample readings
- Determine background radiation levels
- Conduct site survey
- Hold probe ½ inch from surface
- Move probe 2-3 inches per minute
- Slowly frisk over potentially contaminated areas
- Recommend decontamination for contaminated area
- Draw a map to reflect the completed survey

Training Center Provided Material

- Course Materials
- Survey Meter

Delegate Requirements

- None

Reference Material / Documents

Department of Transportation (DOT)

- 49 CFR 173 – General Shipping Requirements

Department of Environmental Quality (DEQ)

Implementation Manual for Management of NORM in Louisiana

Radiation Protection Division