

Ludlum Measurements Inc. Open House Training Course Schedule

Tuesday, April 11

| 9:00 a.m. | 10:00 a.m. | 11:00 a.m. | Lunch break | 1:00 p.m. | 2:00 p.m. | 3:00 p.m. |
|---|------------|-------------------------|-------------|---|-----------|-----------|
| CMERRTT First Response (1-day course) | | | | CMERRTT First Response (1-day course) | | |
| Calibration Class (1-day course) | | | | Calibration Class (1-day course) | | |
| Radiological Training for Hospital Personnel (1-day course) | | | | Radiological Training for Hospital Personnel (1-day course) | | |
| Radiation Portal Monitors | | Customer Insight: IRDMS | | Fundamentals of Alpha/Beta Counting | | |
| Adit & Eljen tours | | | | CBRN/RadResponder by Chainbridge Technologies | | |
| Ludlum's main building tour, WTM, Machine Shop | | | | Hands-on RPM Workshop (at Radiation Security Division) | | |
| | | | | Ludlum's main building tour, WTM, Machine Shop | | |

Wednesday, April 12

| 9:00 a.m. | 10:00 a.m. | 11:00 a.m. | Lunch break | 1:00 p.m. | 2:00 p.m. | 3:00 p.m. | |
|--|----------------------------|--------------|--|---|-----------|-----------|---------|
| CMERRTT First Response (1-day course) | | | | CMERRTT First Response (1-day course) | | | |
| Calibration Class (1-day course) | | | | Calibration Class (1-day course) | | | |
| NORM/TENORM Training (1-day course) | | | | NORM/TENORM Training (1-day course) | | | |
| Engineering Roundtable | Model 3000 Series Overview | | | HPGe Detectors | | | VPI/RDS |
| | | Lumic Linker | | CBRN/RadResponder by Chainbridge Technologies | | | |
| Fundamentals | 2B Tech | | | Personnel Contamination Monitors | | | |
| Adit & Eljen tours | | | | Radiation Security Division tour | | | |
| Ludlum's main building tour, WTM, Machine Shop | | | Ludlum's main building tour, WTM, Machine Shop | | | | |

Thursday, April 13

| 9:00 a.m. | 10:00 a.m. | 11:00 a.m. | 1:00 p.m. | 2:00 p.m. | 3:00 p.m. |
|---|-------------------|------------|---------------------------------------|-----------|-----------|
| CMERRTT First Response (1-day course) | | | CMERRTT First Response (1-day course) | | |
| Engineering Roundtable | 9DP Class | | | | |
| | CBRN/RadResponder | | | | |
| Teletrix | Bladewerx | RSCS | | | |
| Adit | Eljen | | | | |
| CBRN/RadResponder by Chainbridge Technologies (based on demand) | | | | | |
| Ludlum's main building tour, WTM, Machine Shop | | | | | |
| Radiation Security Division tour | | | | | |
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OPEN HOUSE TRAINING CLASSES

Ludlum Measurements Inc. Open House 2023

Compressed Modular Emergency Response Radiological Transportation Training (CMERTT)

Department of Energy's Transportation Emergency Preparedness Program (Tues – Thurs, April 11-13, 1-day course repeated each day)

This training course is designed to help emergency responders prepare for transportation accidents involving radioactive material. Through hands-on practical exercises using incident pictures, props, and radioactive material sources, students participate in an interactive discussion of radiological principles, radiological survey instruments, and decontamination techniques for handling radiologically contaminated victims. Students will receive a certificate from the Department of Energy's Transportation Emergency Preparedness Program, for medical response personnel. This course is provided in conjunction with the Sweetwater Fire Department.

Calibration Training: Analog and Digital Meter Calibration

Dru Carson and Jeramy Thompson (Tues & Wed, April 11-12, 1-day course, repeated)

This seminar, designed for attendees with a basic knowledge of health physics and ionizing radiation, will cover the calibration and setup of both Digital and Analog instrumentation. We will learn calibration of the Model 3 Analog Survey meter including the plateau setup of a Model 44-2 Scintillator as well as determining the cpm per uR/h conversion. For the digital instrument, we will cover the setup of the Model 2241 Digital Scaler-Ratemeter. We'll be discussing the use of a pulse meter for the calibration of instruments/GM detectors, dead time, the use of calibration constants, energy response curves, various measurements, and test equipment, as well as an overview of what you should look for in calibration documents, and much more!

Radiation Portal Monitors: Technical Essentials Knowledge and Skills

Randall Rea (Tues, April 11, 9:00 a.m. – 11:00 a.m.)

An in-depth review of Radiation Portal Monitors (RPMs) from the Radiation Security Division's Technical and Field Service Manager with over 35 years of experience. Covering the history, purpose, hardware, maintenance, and technical essentials related to RPM systems.

Customer Insight: Integrated Radiation Detection Monitoring System (IRDMS)

(Tues, April 11, 11:00 a.m. – 12:00 p.m.)

Industry professionals present the challenges, recommendations, and successes in implementing an Integrated Radiation Detection Monitoring System (IRDMS). The IRDMS consists of multiple radiation monitoring detectors in entrances, exits, shredders, charge buckets (various points), dust collectors, and more. The objective is to increase awareness for Steel Mill and Scrap Recycling End Users to better protect themselves from unknown radiation sources arriving at their facilities.

Radiological Training for Hospital Personnel

Department of Energy's Transportation Emergency Preparedness Program

(Tues, April 11, full-day course)

This course is designed to introduce hospital medical care providers to ionizing radiation, the biological effects of ionizing radiation, facility preparation, radiological instrumentation, patient decontamination, and patient care/treatment. Care providers will participate in a hands-on exercise for handling patients who have been exposed to ionizing radiation and/or are contaminated with radioactive material.

The exercise allows hospital care providers the opportunity to demonstrate prompt and appropriate care for accident victims while minimizing exposure and preventing the spread of contamination. The course has been developed to train hospital-type medical care providers as well as non-medical care providers (e.g., maintenance, security, etc.) who may be responsible for managing or treating a patient that has been exposed to radiation or is contaminated with radioactive material.

Upon successful completion of this training, hospital personnel will have developed the knowledge and skills necessary to safely perform assigned duties to handle and treat victims of a radiological incident. Students will receive a certificate from the Department of Energy's Transportation Emergency Preparedness Program. This course is provided in conjunction with Rolling Plains Memorial Hospital.

Radiation Portal Monitors: Hands-on Workshop and Demonstrations

Randall Rea (Tuesday, April 11, 1:00 p.m. – 4:00 p.m.)

Receive hands-on user training at the Radiation Security Division's assembly and testing facility from the Technical and Field Service Manager and an experienced team of Field Service Technicians with over 76 years of combined experience. Users will get simulation-based skills training using Ludlum's Radiation Portal Monitors (RPMs). With various models ranging from drive-through to conveyor systems, users will gain a thorough understanding of the software and hardware that power and drive our RPMs.

Fundamentals of Alpha/Beta Counting

Shawn Googins, MS, CHP (Tues, April 11, 1:00 p.m. – 4:00 p.m.)

Learn the details of both "standard" and low-level alpha/beta counting from contamination smears, air filters, basic radiochemistry samples, and drinking water analysis. We will discuss why we need to correct for self-absorption for smears/air filters, setting up mass attenuation curves for radiochemistry samples, and reagent blanks, as well as the importance of "smear collection efficiency" for contamination and DOT transportation surveys. The class will also cover various methods of radon progeny correction, why and how to select guarded and shielded units, anticipated performance, and elements of QA/QC. We'll discuss GM counters, gas flow proportional counters, and various counting gases.

Lumic Linker

Ashley Ramey and Mike Rook (Tues, April 11, 11:00 a.m. – 12:00 p.m.)

(Wed, April 12, 11:00 a.m. – 12:00 p.m.)

Ludlum's free Lumic Linker app for iOS and Android allows first responders to receive simple readings from the instrument onto phones, iPads, and other handheld devices. Learn how the Linker integrates with the RadResponder/ CBRNResponder network, communicating to the service and posting data into its system.

CBRNResponder (RadResponder) Training

Chainbridge Technologies (Tues, April 11, 1:00 p.m. – 4:00 p.m.)

(Wed, April 12, 1:00 p.m. – 4:00 p.m.) (Thurs, April 13, 10:00 a.m. – 12:00 p.m. if needed)

Currently used by over 13,000 personnel, RadResponder was named the national standard and whole community solution for the management of radiological data in 2016 and has grown in capabilities and users each year since. RadResponder has evolved into a multi-hazard data collection and situational awareness tool, now called CBRNResponder.

The CBRNResponder demo and presentation will showcase the overall capabilities of the CBRNResponder program and our various integration options for seamless data collection. This session will review what CBRNResponder is and how this free tool for federal, state, local, tribal, territorial, and industry organizations can be leveraged.

The Chainbridge Team will provide an overview of the several ways real-time data can be collected, including using Ludlum's equipment with our API (application programming interface). Our goal is to demonstrate how integration and interoperability are the path forward in building a networked ecosystem of telemetering equipment, mobile applications, and common operating pictures across the whole CBRN community.

N.O.R.M. Training: TENORM Accumulation, Detection and Regulation Seminar

Mel Hebert of A-Bear Consult LLC (Wed, April 12, All-day course)

Gain awareness level safety information to identify and protect against NORM/TENORM-related risks. With 35 years of industry experience, Health Physicist Mel Hebert will provide details on background radiation science, TENORM accumulation and industry sources, TENORM radiation and contamination monitoring, and regulations. This training course meets applicable regulatory training requirements and includes a certificate of completion and comprehension.

Engineering Roundtable

Richard Smola and Allan Hartfield (Wed, April 12, 9:00 a.m. – 10:00 a.m.)

(Wed, April 12, 2:00 p.m. – 3:00 p.m.) (Thurs, April 13, 9:00 a.m. – 10:00 a.m.)

Join us for a lively discussion with a panel of engineers, operators, and specialists. This roundtable will provide an opportunity to see Ludlum's newest product offerings, ask questions and get insight directly from Ludlum Measurements' engineering experts. Participate in this roundtable and share your unique perspective. We'll have frank conversations about what works and what doesn't, getting answers and viewpoints from industry experts.

Principles of Nuclear Interactions and Radiation Detection

Haris Zulhilmi (Wed, April 12, 9:30 a.m. – 10:00 a.m.) This beginner's course covers basic radiation principles and radiation detection for various sources. It includes some basic physics, and a discussion of wavelengths of different forms of radiation, visible, ultraviolet, infrared radio waves, and ionizing radiation. Some practical information on aspects of radiation measurement equipment is included. The course will be hands-on with radiation detection equipment examples for discussion.

Model 3000 Overview/Lumic 2 Calibration Software

Ashley Ramey (Wed, April 12, 10:00 a.m. – 12:00 p.m.)

During this session, participants will learn about the features of the versatile Model 3000 series of digital survey meters including the selection of detectors for various radiological survey applications, and a comparison of the various configurations to ensure you get the correct instrument for your application. We'll also discuss instrument configuration, setup, and calibration using the Lumic 2 software.

2B Technologies Demonstration

Hayden Aubermann (Wed, April 12, 10:00 a.m. - 11 a.m.)

2B Tech, a division of Ludlum Measurements based in Boulder, Colorado, is dedicated to the development and commercialization of new analytical instruments for atmospheric and environmental measurements. Learn about their miniaturized instruments for measurements of ozone (O₃), nitric oxide (NO), nitrogen dioxide (NO₂), mercury (Hg), and other chemical species. 2B Tech's goal has always been to use sound science and innovative technology to provide customers with cutting-edge instrumentation.

HPGe: High Purity Germanium Detectors

Ethan Hull and Desmond Longford of PHDS Co. (Wed, April 12, 1:00 p.m. – 2:00 p.m.)

Join Ethan Hull, CEO and Technical Director of PHDS Co. from Knoxville, Tennessee, to discuss High Purity Germanium Detector Technology. Then, learn the application of new generation portable HPGe Detectors from Desmond Longford, PHDS Co. Sales Director, and Radiochemist.

Hand & Foot, Personnel, and Article/Waste Monitors

Shawn Googins, Dirk Marks (Wed, April 12, 1:00 p.m. – 3:00 p.m.)

This course will enable you to understand the basic requirements, regulations, and industry guidance for calibrating, testing, self-shielding considerations, and radon progeny correction. We will also discuss personnel contamination monitoring surveys using hand/foot, whole body surface contamination, and gamma personnel portals. The course also includes a discussion of waste monitoring and free-release monitors for releasing articles and objects from controlled areas.

VPI/ RDS

Jeremy Williams and Patrick Lewis (Wed, April 12, 3:00 p.m. – 4:00 p.m.)

The newest division of Ludlum Measurements, VPI Technology provides expertise in radiation physics, spectral identification, and advanced sensor technology. Their in-house design engineering staff are experts in a wide range of disciplines. Learn about VPI systems including D-tect Systems, focused on combating the urgent threat from radiological and other hazardous substances.

Teletrix Simulation Equipment

Jason O’Connell (Thurs, April 13, 9:00 a.m. – 10:00 a.m.)

See radiation meter and contamination monitor simulation systems produce readings on actual radiation meters without using sources of any kind, avoiding exposure or accumulated dose to personnel. The systems deliver real-time readings without verbal injects and enable training in any environment via remote control.

ADIT Electron Tubes

Paul Davison (Thurs, April 13, 9:00 a.m. – 10:00 a.m.)

ADIT Electron Tubes specializes in photomultipliers used in radiation detection and measurement devices with diameters ranging from 13 to 133 mm (0.5 to 5 in.). The ADIT product line of photomultiplier tubes (PMTs) is a descendant of products manufactured and developed by Space Research Corporation, Inc.

9DP Deep Dive: Special Features, Humidity Mitigation, and Troubleshooting

Ashley Ramey (Thurs, April 13, 10:00 a.m. – 12:00 p.m.)

Learn about the features of the Model 9DP series of digital Ion Chambers. We will discuss the differences among this series of instruments, and how to select the right instrument for your application. Learn how to install configuration and firmware files via USB drive; how to configure features through the Dimension Configuration Manager; and how to remedy common issues that arise with this series of instruments.

Bladewerx

David Baltz (Thurs, April 13, 10:00 a.m. – 11:00 a.m.)

Specializing in portable alpha-in-air instrumentation and client software applications, Bladewerx has a reputation for providing cutting-edge technology in both algorithm development and attractive but practical software user-interface design. Join David Baltz, founder, and chief technologist of Bladewerx, for product demonstration and discussions.

Eljen Technology

Chuck Hurlbut (Thurs, April 13, 10:00 a.m. – 11:00 a.m.)

Eljen Technology is a world leader in the development and manufacturing of organic scintillation material encompassing cast plastic scintillators and liquid scintillators with core personnel boasting over 40 years of in-depth experience. Join General Manager, Chuck Hurlbut, recipient of the Glenn F Knoll Radiation Instrumentation Outstanding Achievement Award to learn more about the company providing scintillators and assemblies to research and commercial customers worldwide since 1997.

Radiation Safety & Control Services, Inc.

Stephen Nester (Thurs, April 13, 11:00 a.m. – 12:00 p.m.)

Radiation Safety & Control Services, Inc. (RSCS) is a provider of radiological safety consulting, training, and instrumentation calibration and support services. RSCS also manufactures the SIM-Teq® advanced line of dosimeter and survey instrument training products. SIM-Teq radiation training products are used across DOD, DOE, nuclear power plants, academia, and medical organizations and facilities, including providing the “RN” component of the NATO CBRN exercise CLEAN CARE, held in the Czech Republic in June '22. Combining auto-response and manual control override capability, the product line provides simulation of simple to complex hazardous radiological environments using a variety of training model instruments to conduct small to large-scale exercises.