Berkeley Nucleonics Corporation

Radiation Detection, Surveillance and Measurement Training Seminars

Nov. 20-21, 2003 • New Orleans, LA
April 12-13, 2004 • Washington, DC

The Berkeley Nucleonics Training Seminar provides attendees with a comprehensive understanding of the principles and techniques involved in radiation detection and isotope identification using the SAM 935 Surveillance and Measurement System. The 2003-2004 training schedule includes seminars located in Portland, OR, New Orleans, LA and Washington, DC.

Instruction will place emphasis on real-time identification of all radionuclides including Special Nuclear Materials (SNM) and detection of shielded radiological material utilizing the SAM 935's neutron detection capability.

Who Should Attend?

This seminar is appropriate for Emergency Response Personnel, Health Physicists, Law Enforcement, Border Patrol Agents, Medical Personnel and others involved with nuclear detection and analysis.

About the Instructors

James McQuaid is a recognized authority in the field of nuclear chemistry and instrumentation. He has more than 40 years of experience in the design and development of nuclear instrumentation. Prior to becoming a BNC consultant and training instructor, McQuaid was a Research Engineer and Group Leader at Lawrence Livermore National Laboratory (LLNL). During his 31 years at LLNL, he was involved in numerous projects related to Space Science, Environmental Science, Nuclear Safeguards, Heavy Element Research, Defense Science and Nuclear Chemistry. He also served as Group Leader of the Nuclear and X-ray Measurement Group, an aggregation of more than 25 research engineers who developed spectroscopy systems for research initiatives. McQuaid was also a Lab Consultant on solid state detector systems and a Principal Investigator for an U.S. Department of Energy Cooperative Research and Development Agreement (CRADA).

About the Instructors (cont.)

John Yee is Applications Manager for radiation measurement products at Berkeley Nucleonics Corporation. He has been with the company since 1971. A designer of pulse and timing generators when he first arrived at BNC, John migrated to the Applications Department in the late '70s and now heads the group.

Yee has been instrumental in the research and development of enhancements to the SAM 935 Surveillance and Measurement system that have enabled the instrument to remain at the forefront of the radiation detection field. Most recently, John oversaw the development of a tantalum shield and collimator option for the SAM 935 to improve its energy resolution and directionality. Yee received a BSEE degree from Stanford University and a MSEE from the University of California at Berkeley.

Agenda Summary

Day 1

0830 - 0900 Registration and Continental Breakfast

0900 - 0915 **INTRODUCTION:**
SAM 935 Real time detection, identification and analysis of radioactive materials.

0915 -1015 SAM 935 System Overview – Understanding the System Operation.

- Smart Interface to the MCA
- QCC Technology
- Library and Modes of Operation
- Calibration and Background Measurement
- Alarms, Reports and Analysis
- Batteries and Charging
- Summary, Feedback and Questions

1015 – 1030 ***Break***

1030 – 1200 **INTERACTIVE TRAINING**
Basic Operation of SAM 935.

- Status Screen
- Utility Menu
- Monitor Mode
- Dose Rate Calibration
- Trigger List
- Source I.D.

Certification:

American Academy Of Health Physics - 16 CECs

American Board of Industrial Hygiene - 2 CM Points

Agenda Summary (cont.)

1200 – 1330 ***Lunch***

1330 – 1400 Isotope Library Functionality.
1400 – 1430 Search and Identification of Isotopes.
1430 – 1500 Storing Spectra – alternative methods.

1500 – 1515 ***Break***

1515 – 1600 Radiation lines – editing, enabling/disabling.
1600 – 1630 Report generation – transmitting to a PC or printer
1630 – 1645 Downloading stored alarms to a PC.
1645 – 1700 Q & A – Discussion and clarification of training material.

Day 2

0830 - 0900 Continental Breakfast

0900 – 0930 SAM Accessories and Complementary Equipment

0930 – 1015 REAL TIME DETECTION, IDENTIFICATION AND ANALYSIS OF SNM

Issues associated with SNM detection:

- Detecting plutonium and uranium
- Affects of shielding
- Masking SNM
- Library modifications – Handout
- Utilizing the neutron detector

1015 – 1030 Break

1030 – 1200 REAL TIME DETECTION, IDENTIFICATION AND ANALYSIS OF SNM (continued)

Simulated Exercises:

Exercise 1 – Identify plutonium sample
Exercise 2 – Identify uranium samples, HEU and LEU
Exercise 3 – Identify neptunium and uranium 233

1200 – 1330 ***Lunch***

1330 – 1500 Identify hidden sources. After identifying:
1) Store the alarm
2) Perform MCA analysis on each stored event
3) Print each stored spectrum

1500 – 1600 Q & A, Discussion and wrap-up

Seminar Locations

- Nov. 20-21, 2003, New Orleans, LA
- April 12-13, 2004, Washington, DC

Hotel accommodations to be announced.

Registration

Space is limited. All registrations will be accepted on a space availability basis.
Confirmations will be sent when registration is received.

Tuition for the two-day training seminar is $895.00. Fee includes seminar materials, daily continental breakfast and afternoon break.

FAX the completed registration form with payment information to BNC at 415-453-9956. You may also mail your registration form with credit card information or check (payable to Berkeley Nucleonics) to:

BNC
Dept. of Training
3060 Kerner Blvd, #2
San Rafael CA 94901

Questions?

For more information on the Berkeley Nucleonics Training Seminar or questions about registration, please call BNC's Training Department at 800-234-7858, 415-453-9955 or patrice.gates@berkeleynucleonics.com.

BNC reserves the right to cancel training courses. A full refund is provided for any advanced fees paid for a cancelled course. Attendee withdrawal from a BNC seminar within two (2) weeks of the start of class is subject to a 50% cancellation fee. Withdrawal notification must be in writing and be received prior to the two-week limit for full fee reimbursement. The failure of the student to attend the course, without prior written notification, is interpreted as an unauthorized student withdrawal and is subject to full payment of fees.

Registration Form

_____Nov. 20-21, 2003, New Orleans, LA
_____April 12 - 13, 2004, Washington, DC

_____
Name (Last, First and Middle)

_____
Business Affiliation and Title

_____
Business Address

_____
Phone Number and Fax Number

_____
E-mail address

Fees:

All fees are per person. Includes all course materials, morning and afternoon refreshments and facility fees.

Tuition per person **$ 895.00** Amount Enclosed $_____

Method of Payment **(Payment must accompany form.)**

- ☐ Check or Money Order (Payable to Berkeley Nucleonics. Checks must be drawn on a U.S. bank.)
- ☐ VISA
- ☐ MasterCard
- ☐ Purchase Order

_____
Card Number and Expiration Date

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Name as it Appears on Card

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Signature

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Purchase Order (P.O.) number

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P.O. Bill To Address

Mail to BNC Department of Training - 3060 Kerner Blvd #2, San Rafael, CA 94901

If paying by credit card or P.O., you may fax this form to 415-453-9956