

WELCOME TO THE CONFERENCE

The Organizing Committee and Yankee Atomic Electric Company welcome you to the Forty-First Annual Conference on Bioassay, Analytical and Environmental Radiochemistry. We are pleased to have had the opportunity to organize the conference this year and to interact with our numerous colleagues from the many organizations represented annually at the conference. The scientific program is exceptional, covering a diversity of topics including new analytical procedures for environmental site restoration and bioassay, internal dosimetry, NIST standard reference material, new approaches to laboratory quality control and proficiency testing, naturally occurring radionuclides in terrestrial and marine environments, and metrological applications. At this annual conference, we are pleased to have five technical workshops and fifty-one technical papers.

The compilation of abstracts within this Conference book represents material submitted by the author(s) in a reproducible form. As such, it has not been peer-reviewed or edited. Inclusion in the Conference presentation schedule does not preclude publication in a technical journal. A "standing" policy was established very early in the history of the Conference that permits the acceptance of either a regular or an extended abstract in order to offer the authors the opportunity to submit research material that was either complete or still in-progress. Other Conference traditions have been summarized in the 40th Annual Conference Book.

This Conference is hosted by the **Yankee Atomic Environmental Laboratory** of the Yankee Atomic Electric Company (YAEC), Bolton, Massachusetts. This conference marks the second time (28th in 1982) that the Yankee Atomic Environmental Laboratory has sponsored the Conference. The services of Text Graphics of YAEC were used for word processing, graphics and the Conference Book assembly. The Conference logo graphics were obtained from Gary Kramer of the Human Monitoring Laboratory, BRMD. Henry Spitz, Conference Director for the 40th Conference, provided essential conference records and the attendance data base to facilitate organizing this Conference. The Conference Services of the Swissôtel have been very cooperative in meeting our changing requirements as the Conference preparations progressed.

This Conference was organized by the following staff of the Yankee Atomic Environmental Laboratory: David E. McCurdy, Anita Jensen, Estella Laurenzo and Christine Albright. Please feel free to seek their assistance if you have any questions or specific needs.

For your convenience, there are three available sources for Conference information. The first source is the members of the Conference organizing committee mentioned previously. The second source is the carefully organized material in the front sections of this Conference book. The third source is the electronic events board in the Swissôtel lobby. All daily events or noted changes to the schedule shall be announced on the electronic events board. So please review this electronic events board periodically.

41st Conference on Bioassay, Analytical and Environmental Radiochemistry

Date	Time	Location	Event
Sunday, Nov. 12	3:00 – 8:30 PM	3rd Floor – Lobby	Registration
	6:30 – 8:30 PM	3rd Floor – Lobby Lounge	Reception
Monday, Nov. 13	7:15 – 6:30 PM	4th Floor – Lobby	Registration
	7:45 – 9:45 AM	Lower Level – Quincy	Technical Workshop
	9:45 – 10:00 AM		Break
	10:00 – 12:00 PM	Lower Level – Quincy	Technical Workshop
	12:00 – 1:00 PM		Lunch
	1:00 – 3:00 PM	Lower Level – Quincy	Technical Workshop
	3:00 – 3:15 PM		Break
	3:15 – 5:15 PM	Lower Level – Quincy	Technical Workshop
	6:30 – 8:30 PM	4th Floor – Exhibit Areas	Vendor Reception
	8:00 PM	4th Floor – Cambridge	DOE Data Validation Meeting
Tuesday, Nov. 14	7:15 – 5:00 PM	4th Floor – Lobby	Registration
	7:30 – 5:15 PM	4th Floor – Exhibit Areas	Vendor Exhibits
	8:00 – 10:05 AM	4th Floor – Grand Ballroom	General Session
	10:05 – 10:20 AM	4th Floor – Exhibit Areas	Break
	10:20 – 12:00 PM	4th Floor – Grand Ballroom	General Session
	12:00 – 1:15 PM	3rd Floor – Marquis	Buffet Lunch
	1:15 – 2:55 PM	4th Floor – Grand Ballroom	General Session
	2:55 – 3:15 PM	4th Floor – Exhibit Areas	Break
	3:15 – 5:15 PM	4th Floor – Grand Ballroom	General Session
	7:00 PM	4th Floor – Cambridge	ANSI N42.23 Committee Meeting
Wednesday, Nov. 15	7:30 – 3:00 PM	4th Floor – Lobby	Registration
	8:00 – 3:15 PM	4th Floor – Exhibit Areas	Vendor Exhibits
	8:00 – 9:40 AM	4th Floor – Grand Ballroom	General Session
	9:40 – 10:00 AM	4th Floor – Exhibit Areas	Break
	10:00 – 12:00 PM	4th Floor – Grand Ballroom	General Session
	12:00 – 1:15 PM		Lunch
	1:15 – 2:55 PM	4th Floor – Grand Ballroom	General Session
	2:55 – 3:15 PM	4th Floor – Exhibit Areas	Break
	3:15 – 4:55 PM	4th Floor – Grand Ballroom	General Session
Thursday, Nov. 16	8:00 – 9:40 AM	Lower Level – Quincy	General Session
	9:40 – 10:00 AM	Lower Level – Quincy	Break
	10:00 – 12:40 PM	Lower Level – Quincy	General Session
	12:40 PM		Close of Conference
	2:00 – 7:00 PM	Berkshire Room	MARLAP Committee Meeting
Friday, Nov. 17	8:00 – 5:00 PM	Lexington Room	MARLAP Committee Meeting



41st Conference on Bioassay, Analytical and Environmental Radiochemistry

Vendor Workshops

Date	Time	Location	Workshop Title
Sunday, Nov. 12	8:00 – 5:00 PM	4th Floor – Dedham Room	Perals Workshop
	8:45 – 5:00 PM	Lower Level – Quincy Room	
	8:45 – 9:00 AM		Continental Breakfast
	9:00 – 11:30 AM		Packard Workshop
	11:30 – 1:00 PM		Lunch
	12:45 – 1:00 PM		Coffee
	1:00 – 3:00 PM		3M and IBC Workshop
	3:00 – 3:30 PM		Break
	3:30 – 5:00 PM		Oxford Workshop
Monday, Nov. 13	1:00 – 5:00 PM	Marquis Room	EIChroM Workshop



41st Conference on Bioassay, Analytical and Environmental Radiochemistry

Technical Workshops

Date	Time	Location	Workshop Title
Monday, Nov. 13	7:45 – 5:15 PM	Lower Level – Quincy	Technical Workshops
	7:45 – 9:45 PM		<i>"Radiochemistry Lab Waste Management"</i> Dr. C. F. Wu, Westinghouse
	9:45 – 10:00 AM		Break and Setup
	10:00 – 12:00 PM		<i>"ICP Mass Spectrometry: An Instrumental Overview with Insights into Radiochemical Applications"</i> Tom Rittberg, Fisons Instrument
	12:00 – 1:00 PM		Lunch
	1:00 – 3:00 PM		<i>"Operational Laboratory Quality Control"</i> Environmental Science & Engineering Doug Van Cleef, Environmental Science & Engineering
	3:00 – 3:15 PM		Break and Setup
	3:15 – 5:15 PM		<i>"DOE & ANSI Initiatives on Rad Data Validation"</i> S. Salaymeh, Westinghouse Savannah River D. Bottrell, DOE Analytical Services Division

41ST BIOASSAY CONFERENCE WORKSHOP

WORKSHOP TITLE: **RADIOCHEMISTRY LABORATORY WASTE MANAGEMENT**

TIME/DATE/PLACE: 8-10 a.m., November 13, 1995, Boston, MA

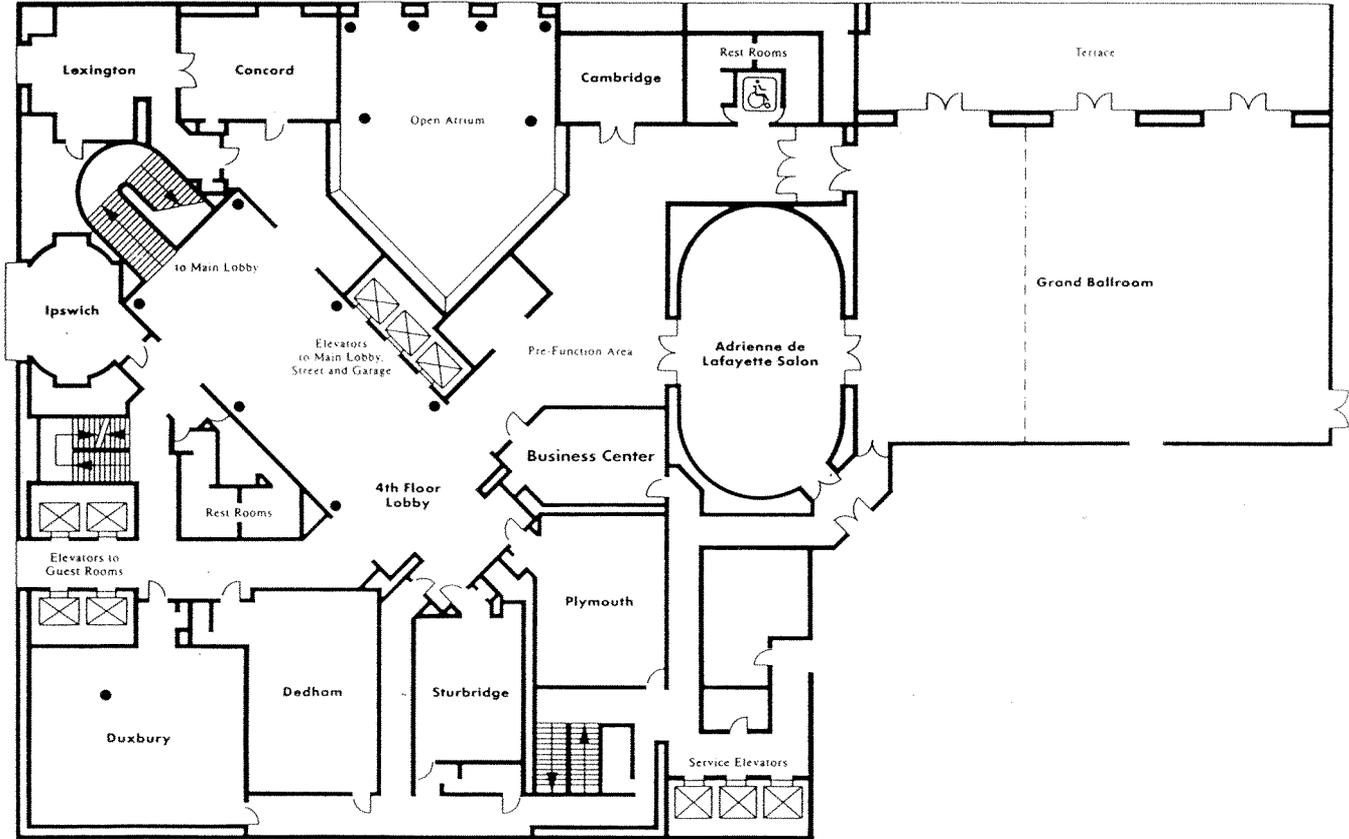
ORGANIZER: Chuan-Fu Wu, Ph.D., CHP, Manager, Environmental and Radiological Control, WIPP/Westinghouse Electric Corporation

CO-ORGANIZER: Don Fingleton, Ph.D., Director, Carlsbad Environmental Monitoring & Research Center

FORMAT: 10 minute presentation from each speaker followed by a 30 minute panel discussion

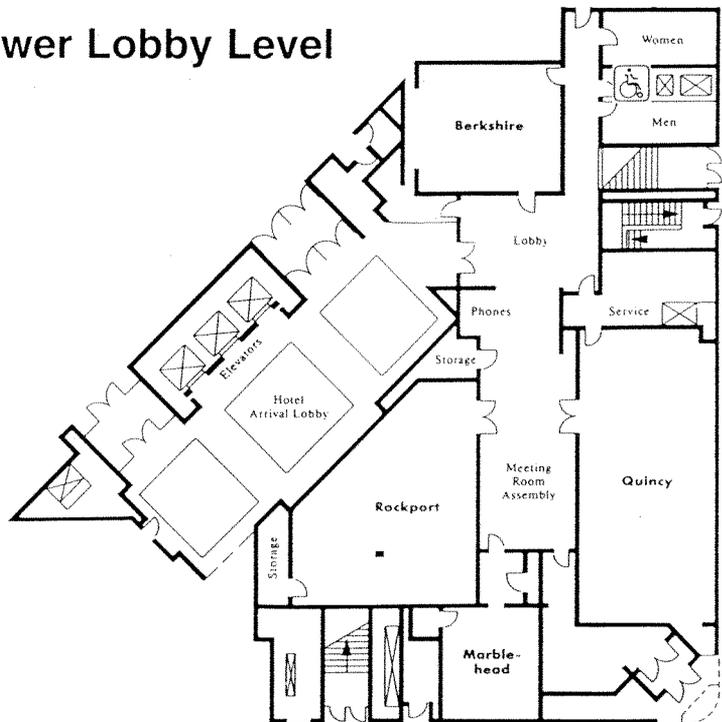
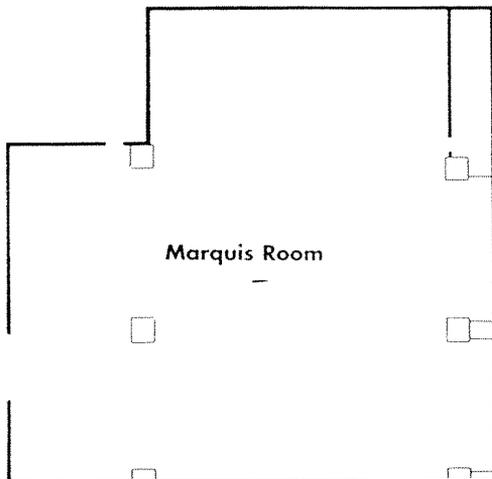
TOPIC	INVITED SPEAKER
1. Evaluation of Five Commercially Available Extractive Scintillators for the Measurement of Ra, Pb, U, Th, Pu, Am, Cm, and Np by PEARLS and LS Spectrometry	Dr. Sal Scarpitta, U.S. DOE/EML
2. Waste Minimization in the Laboratory	Dr. Jim Harvey, Eichrom
3. Development of the Waste Management Plan for the Environmental Evaluation Group's Radiochemistry Laboratory	Mr. Don Gray, EEG
4. Waste Management Issues When Contracting Laboratory Services	Mr. Rich Wells, Lockheed Martin
5. Management of Radiochemistry Laboratory Waste at Oak Ridge National Laboratory	Dr. Govind Rao, Oak Ridge National Laboratory
6. Waste Handling at TMA/Richmond	Mr. Rodney Melgard, TMA/Richmond
7. Handling Analytical Wastes at Quanterra/Richland	Mr. Matt Lardy, Quanterra/Richland
8. Waste Management/Disposal Requirements for the Licensing of Radiochemistry Laboratories in the State of Georgia	Dr. Hermon Rao, Nuclear Technology Services, Inc.
9. Radiochemistry Waste Management at the Illinois Department of Nuclear Safety	Dr. Lih-Ching Chu, Illinois Department of Safety

Level 4



Lower Lobby Level

Lobby Level



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THE AWARDS

HISTORY

The Organizing Committee of the 32nd Annual Conference on Bioassay, Analytical, and Environmental Radiochemistry began the tradition by presenting three awards for meritorious service to the Bioassay Conference.

The Organizing Committees of the 33rd, 35th and 37th Annual Conferences have carried on this tradition which, as you can see, is not necessarily an annual event.

THE AWARD

The award has taken the form of either a parchment, which was also signed by the attendees at the assembly, or a wall plaque. The text of the award is reproduced below:

Whereas, the participants in this conference pursue professional excellence and soulful cogitation,

Whereas, topics of debate at this conference are at the forefront of scientific knowledge,

Whereas, this conference is blessed with independent existence, and is dedicated to the preservation of free creativity and open exchange of intellection, and

Whereas, these publications of acclaim are the sole documents issued by this conference for public perustration,

Be it known

that all honours, rights, privileges, and praises which pertain to this letter of recognition are presented to

by conference colleagues in sincere felicitation and appreciation for inspirational leadership and meritorious scientific contributions at the **XXth Bioassay, Analytical, and Environmental Radiochemistry Conference.**

THE RECIPIENTS

A. Brodsky C. W. Sill J. Sedlet	32nd Annual Meeting Washington, DC
W. D. Moss K. Heid L. Levantahl	33rd Annual Meeting Berkeley, CA
D. E. McCurdy G. H. Kramer K. G. W. Inn	35th Annual Meeting Charleston, SC
J. T. Harvey R. M. Hall	37th Annual Meeting Ottawa, Ontario
J. E. McInroy	38th Annual Meeting Santa Fe, NM
I. M. Fisenne R. Holtzman	40th Annual Meeting Cincinnati, OH
M. Thein W. B. Spitz D. G. Olson	41st Annual Meeting Boston, MA

NOMINATIONS

If you are aware of any individual that fulfills the criteria outlined in the text of the award and is a regular attendee at this conference you are invited to submit a nomination for this award to the next Organizing Committee Chairperson.

TUESDAY, NOVEMBER 14, 1995

TIME GRAND BALLROOM

08:00-08:10 ***Opening Remarks and Welcome***
Dr. Stephen P. Schultz
Vice President, Yankee Atomic Electric Company

Session 1 Chairperson: **Dale G. Olson**
1576 Cassiopeia St.
Idaho Falls, ID 83402

TIME TITLE

08:10-09:05 ***KEYNOTE ADDRESS: Any Answer or the Correct Answer.***
Dale G. Olson, retired Senior Scientist
Radiological and Environmental Sciences Laboratory
U. S. Department of Energy
Idaho Falls, ID 83401

09:05-09:25 ***An Analysis of Total Propagated Uncertainties in Analytical Radioactivity Measurements of Environmental Samples.***
Anna Berne, Vivian Pan and Herman Eng
Environmental Measurements Laboratory
U.S. Department of Energy
New York, NY 10014

09:25-09:45 ***Partnering as a Tool for Improving Analytical Laboratory Performance in Environmental Monitoring.***
M. M. Khalil and T. P. Killeen
Westinghouse Savannah River Company
Aiken, SC 29808

09:45-10:05 ***The Department of Energy's Integrated Performance Evaluation Program (IPEP): Pilot Studies for Implementation.***
P. Lindahl, et al.
Analytical Chemistry Laboratory,
Argonne National Laboratory
Argonne, IL 60439

10:05-10:20 **BREAK**

TUESDAY, NOVEMBER 14, 1995

GRAND BALLROOM

Session 2 Chairperson: **Saleem Salaymeh**
Environmental & Hazards Analysis Group
Westinghouse Savannah River Co.
Aiken, SC 29803

TIME TITLE

10:20-10:40 ***Preparation and Characterization of a Performance Evaluation Soil Sample for QA/QC of Radiochemical Analyses.***
L. E. Fiske and D. E. McCurdy
Shepherd Miller Incorporated
Fort Collins, CO 80525

10:40-11:00 ***Factors for Consideration in the Development of a Blind In Vitro Quality Assurance Program.***
Timothy J. Donovan, et al.
Lockheed Martin Corporation, Knolls Atomic Power Lab Inc. Schenectady, NY 12301

- 11:00-11:20 ***Survey of Quality Control Practices at Radioanalytical Laboratories.***
B. S. Crandall and K. K. Crandall
Environmental Monitoring Section, EPD and Health Physics
Technology
Westinghouse Savannah River Company
Aiken, SC 29808
- 11:20-11:40 ***Empirically Determined Decision Levels - Development and Use In An In Vitro Bioassay Program.***
Brian J. Lawson, Jane M. Tapio and Richard J. Winslow
Lockheed Martin Corporation, Knolls Atomic Power Lab Inc. Schenectady, NY 12301
- 11:40-12:00 ***Empirically Determined Decision Levels - Development and Use In An In Vivo Bioassay Program.***
Brian J. Lawson, Michael A. Orcutt and Richard J. Winslow
Lockheed Martin Corporation, Knolls Atomic Power Lab Inc. Schenectady, NY 12301
- 12:00-13:15 **LUNCH SPONSORED BY THERMO NUCLEAR SERVICES, EICHROM INDUSTRIES, INC. AND THE YANKEE ATOMIC ENVIRONMENTAL LABORATORY**

TUESDAY, NOVEMBER 14, 1995

GRAND BALLROOM

Session 3

Chairperson: **Mitchell D. Erickson**
Environmental Research Division
Argonne National Laboratory
Argonne, IL 60439

TIME

TITLE

- 13:15-13:35 ***Development of a Method for the Detection of Technetium-99 in Soil.***
J. B. Miller, et al.
EET TN Corporation
Knoxville, TN
- 13:35-13:55 ***Interlaboratory Study to Validate a Procedure for the Determination of Strontium-89/Strontium-90 in Water.***
Mary Ann Edgell, et al.
Environmental Research Division
Argonne National Laboratory
Argonne, IL 60439
- 13:55-14:15 ***Separation and Analysis of Actinides by Extraction Chromatography Coupled with Alpha Liquid Scintillation Spectrometry.***
J. R. Cadieux and S. H. Reboul
Savannah River Technology Center
Westinghouse Savannah River
Aiken, SC 29808
- 14:15-14:35 ***Microwave-assisted Decomposition of Solid Matrices, and Analysis of Radiostrontium and Plutonium.***
R. Garcia, R. Rosson and B. Kahn
School of Mechanical Engineering
Georgia Institute of Technology
Atlanta, GA 30332
- 14:35-14:55 ***High Accuracy Instrumental Neutron Activation Analysis of Chlorine in Lubricating Base Oils (SRM 1818a) Using Primary Standards.***
L. Tandon and D. A. Becker
Nuclear Methods Group
National Institute of Standards and Technology
Gaithersburg, MD 20899
- 14:55-15:15 **BREAK**

TUESDAY, NOVEMBER 14, 1995

GRAND BALLROOM

Session 4

Chairperson: **Mathias M. Lardy**
Quanterra Environ. Services
Richland, WA 99352

TIME

TITLE

- 15:15-15:35 ***Simultaneous Determination of ^{237}Np , ^{232}Th and $^{234,235,238}\text{U}$ in Urine Samples using Extraction Chromatography, Inductively Coupled Plasma Mass Spectrometry (ICP-MS) and Gamma Spectroscopy.***
Son N. Nguyen, Philip E. Miller, John F. Wild, David P. Hickman and Gary WM. Mansfield.
Lawrence Livermore National Laboratory
Livermore, CA 94551.
- 15:35-15:55 ***Estimation of Environmental Contribution of Uranium in the Dose Assessments of Los Alamos Workers.***
D. Lewis and J.N. Lawrence
Dose Assessment Team
Los Alamos National Laboratory
Los Alamos, NM 87545
- 15:55-16:15 ***Plutonium Dose Assessment Using Blood Samples.***
M. Owais, L.C. Sun and W. J. Klemm
Science Application International Corporation
McLean, VA
- 16:15-16:35 ***The Determination of Np, U and Th in Urine.***
Robert Langston, Son Nguyen and Tracey Simpson
Lawrence Livermore National Laboratory
Livermore, CA 94551
- 16:35-16:55 ***Os-185 Intake Following an Accelerator Target Failure.***
Bruce Murray^{*}, George Holeman^{*} and Richard Holtzman[#].
^{*}Brookhaven National Laboratory, Upton, NY and [#]Argonne National Laboratory, Argonne, IL 60439

TOPICAL PAPER

- 16:55-17:15 ***The Effect of Morale on the Quality of Analytical Results.***
Barry D. Stewart
Environmental Physics, Incorporated
Charleston, SC

WEDNESDAY, NOVEMBER 15, 1995

GRAND BALLROOM

Session 5

Chairperson: **Kenneth G. Inn**
Radioactivity Group
NIST
Gaithersburg, MD 20899

TIME

TITLE

- 08:00-08:20 ***Proposed ANSI Standard for Traceability of Radioactivity Sources to the U.S. - National Institute of Standards and Technology (NIST).***
Daniel M. Montgomery
Analytics, Incorporated
1380 Seaboard Industrial Boulevard
Atlanta, GA 30318

- 08:20-08:40 ***The Low-level Radioactivity Ocean Sediment Standard Reference Material.***
Kenneth G. W. Inn, Zhichao Lin, et al.
National Institute of Standards and Technology
Gaithersburg, MD 20899
- 08:40-09:00 ***Determination of Trace Concentrations of Actinides in the NIST Bone Ash Standard Reference Materials Using TRU-Spec Extraction Resin.***
Zhichao Lin, Kenneth G.W. Inn and Carlos E. Crespo Hernandez.
National Institute of Standards and Technology Gaithersburg, MD 20899
- 09:00-09:20 ***Speciation of Strontium-90 in NIST Natural Matrix Standard Reference Materials.***
Joylene W. L. Thomas, Kenneth G. W. Inn, Maria Elisa Garcia and Rafael Martinez.
National Institute of Standards and Technology
Gaithersburg, MD 20899
- 09:20-09:40 ***Development of a Sequential Extraction Technique to Define the Fractionation of Radioactive Elements in NIST Natural Matrix Standards.***
Michael Schultz, et al.
Environmental Radioactivity Measurement Facility
Department of Oceanography
Florida State University, Tallahassee, FL 32306

09:40-10:00

BREAK

WEDNESDAY, NOVEMBER 15, 1995 GRAND BALLROOM

Session 6

Chairperson: **Tracey Simpson**
Hazards Control Department
Lawrence Livermore National Laboratory
Livermore, CA 94550

TIME

TITLE

- 10:00-10:20 ***Chest Wall Thickness Measurements: The Novel Approach Continues.***
Gary H. Kramer and Linda C. Burns
Human Monitoring Laboratory
Ottawa, Ontario K1A 1C1
- 10:20-10:40 ***The Calibration of Germanium Detectors Used For Lung Counting.***
Gary H. Kramer, Peter Olsen and Suzanne Yiu
Radiation Protection Bureau
Ottawa, Ontario K1A 1C1
- 10:40-11:00 ***Wound Counting Techniques Used for Np Accident Response and Follow-Up: Lessons Learned From a Recent Incident.***
Debbie Kruchten and Tracey Simpson
Lawrence Livermore National Laboratory
Livermore, CA
- 11:00-11:20 ***The Canadian National Calibration Reference Centre for In-Vivo Monitoring: The New Lung Counting System - The Story Continues!***
Gary H. Kramer
Radiation Protection Bureau
Ottawa, Ontario K1A 1C1
- 11:20-11:40 ***The Beginning of the Korean Whole Body Counting Intercomparison Program.***
Gary H. Kramer and Tae-Young Lee
Human Monitoring Laboratory
Ottawa, Ontario K1A 1C1

11:40-12:00

BUSINESS MEETING & FOUNDER'S AWARD PRESENTATION

12:00-13:15

LUNCH

WEDNESDAY, NOVEMBER 15, 1995

GRAND BALLROOM

Session 7

Chairperson: **Myint Thein**
Office of Radiation Protection
Oak Ridge National Laboratory
Oak Ridge, TN 37831

TIME

TITLE

13:15-13:35

Improved Methods for Human and Environmental Monitoring of Americium-241 at Los Alamos Utilizing Extraction Chromatography and Alpha Spectroscopy.
Steve Goldstein, Catherine Hensley, Claudine Armenta and Richard Peters.
Inorganic Trace Analysis, Group CST-9
Los Alamos National Laboratory
Los Alamos, NM 87545

13:35-13:55

Uptake of ²³⁹Pu and ²⁴¹Am in Seawater Via DiphonixTM, and Actinide CU Resins.
D. Reide Corbett, et al.
Department of Oceanography
Florida State University
Tallahassee, FL 32306

13:55-14:15

Application of EmporeTM Disk Technology to Environmental Radiochemical Analysis.
Lesia L. Smith, K. A. Orlandini, et al.
Analytical Chemistry Laboratory
Argonne National Laboratory
Argonne, IL 60439

14:15-14:35

Determination of Geochemical Partitioning of Uranium and Transuranic Elements in a Marine Sediment by the Application of Sequential Chemical Extractions.
Michael Schultz and Bill Burnett
Environmental Radioactivity Measurement Facility
Department of Oceanography
Florida State University, Tallahassee, FL 32306

14:35-14:55

Use of Sequential Extractions to Determine the Speciation of ²²⁶Ra in Phosphogypsum.
Bill Burnett, Geoff Schaefer, Carter Hull and Michael Schultz.
Department of Oceanography
Florida State University, Tallahassee, FL 32306

14:55-15:15

BREAK

WEDNESDAY, NOVEMBER 15, 1995

GRAND BALLROOM

Session 8

Chairperson: **Bill Burnett**
Department of Oceanography
Florida State University, Tallahassee, FL 32306

TIME

TITLE

15:15-15:35

Germanium Detector Efficiency Variations Due to a Change in Matrix Density for Standard Marinelli Beakers.
Aman Khan and Ana Ramirez
Isotope Products Laboratories
Burbank, CA 91504

15:35-15:55

Assays of Thick Soil Samples Using Low-Resolution Alpha Spectroscopy.
Kevin Meyer and Art Lucas
Health Sciences Research Division
Oak Ridge National Laboratory
Oak Ridge, TN 37831

- 15:55-16:15 ***The Use of One-Side Aluminum Coated Thin Polycarbonate Film (2-10 μ M) as a High Precision Neutron or Fission Counter.***
H. L. Pai
 R.A.D. Service and Instruments Limited
 Rexdale, Ontario M9V 3Y2
- 16:15-16:35 ***Design for Measurements of Environmental Radon Using TLDs.***
Barbara C. Fields, Art Blermann and Joel White
 Lawrence Livermore National Laboratory
 Livermore, CA
- 16:35-16:55 ***Fractal Methods in Radioactivity Measurements.***
Thomas M. Semkow
 Wadsworth Center
 New York State Department of Health
 Albany, NY 12201

THURSDAY, NOVEMBER 16, 1995

QUINCY

Session 9

Chairperson: **Ashok Banavali**
Analytical Services Group
Yankee Atomic Environmental Laboratory
Yankee Atomic Electric Company
Bolton, MA 01740

TIME

TITLE

- 08:00-08:20 ***Review of Health Canada's Radioactivity Monitoring Networks.***
R. Kurt Ungar and Murray Walsh
 Radiation Protection Bureau, Health Canada
 Ottawa, Ontario K1A 1C1
- 08:20-08:40 ***Cleanup of Byproduct Material and Verification of Radiological Compliance Using In Situ Detection of Ra-226.***
L. E. Fiske, S. J Baker, J. A. Johnson and N. M. High
 Shepherd Miller, Incorporated
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- 08:40-09:00 ***Natural Radioactivity in Brazilian Mineral Waters and Its Correlation With The Water Composition.***
José Marcus Godoy
 Instituto de Radioproteção e Dosimetria - Comissão National de Energia Nuclear
 Rio de Janeiro, RJ Brazil CEP 22793.970
- 09:00-09:20 ***Applications of Geographic Information Systems for Documentation of Radiological Cleanup.***
N. M. High and L. E. Fiske
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 Fort Collins, CO 80525
- 09:20-09:40 ***Tools for Developing a Radiochemistry Departmental Database.***
Russell L. Moser, Heyward H. Coleman and James B. Westmoreland
 Environmental Physics Incorporated
 Charleston, SC
- 09:40-10:00 BREAK

THURSDAY, NOVEMBER 16, 1995

QUINCY

Session 10

Chairperson: **Ann Mullin**
National Water Quality Laboratory
U.S. Geological Survey
Arvada, CO 80002

TIME

TITLE

- 10:00-10:20 ***Faster, Cheaper, and Pollution-Preventing Analytical Methods for Environmental Radionuclides.***
Mitchell D. Erickson, et al.
Environmental Research Division
Argonne National Laboratory
Argonne, IL 60439
- 10:20-10:40 ***An Alternative to Storage of Spent Dry Cleaner Filters as Mixed Waste.***
C. D. Gans, K. L. James and C. C. Miller
Pacific Gas & Electric Company
San Ramon, CA 94583
- 10:40-11:00 ***Use of Analytical Application for Remediation Results in Technology Transfer.***
Cathey Sharp
Thermal Nuclear Services
Oak Ridge, TN 37830
- 11:00-11:20 ***Determination of ⁸⁹Sr and ⁹⁰Sr in Milk, Soil, and Biota Using an Extraction Chromatography Column: Further Results.***
Hewitt W. Jeter
Teledyne Brown Engineering
Environmental Services
Westwood, NJ 07675
- 11:20-11:40 ***Radiochemistry of Actinides in High Concentration Brine Solutions.***
Amy S. Wong and Nelson D. Stalnaker
Chemical Science and Technology Division
Los Alamos National Laboratory
Los Alamos, NM 87545

THURSDAY, NOVEMBER 16, 1995

QUINCY

Session 10

Chairperson: **Ann Mullin**
National Water Quality Laboratory
U.S. Geological Survey
Arvada, CO 80002

TIME

TITLE

- 11:40-12:00 ***Sampling and Analytical Methods for Radionuclides in Environmental and Waste Samples.***
S. K. Fadeff, et al.
Pacific Northwest Laboratory
Richland, WA 99352
- 12:00-12:20 ***¹³⁷Cs and ²¹⁰Pb Dating of the Sediments in the Lagoons of the Chandeleur Islands, Louisiana.***
John R. Meriwether and Harish Dhurvasula
Physics Department
University of Southwestern Louisiana
Lafayette, LA 70504

12:40

CLOSE OF CONFERENCE