

CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

TRIP REPORT

SUBJECT: American Nuclear Society Winter Meeting
and
The Mixed Low-Level Radioactive Waste Workshop
(20-3702-072-015-001)

DATA/PLACE: November 11-16, 1990 at the Sheraton Washington Hotel,
Washington, D.C.

AUTHOR: Hengameh Karimi

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Washington, D.C.

PERSON PRESENT: Hengameh Karimi

BACKGROUND AND PURPOSE OF MEETING:

The theme for the 1990 Winter Meeting of the American Nuclear Society (ANS) was "The Nuclear Option: Global Energy Security". The Mixed Low-Level Radioactive Waste Workshop was sponsored by the ANS Fuel Cycle and Waste Management Division, and co-sponsored by the Biology and Medicine Division. The program included Commercial Waste, Defense/DOE Waste and Legislative Session.

The purpose for attending this meeting was to enhance my background and to maintain familiarity with the state-of-the-art activities in the field of nuclear engineering.

SUMMARY:

The technical program for the 1990 Winter Meeting has 112 sessions, featuring more than 530 papers. The morning sessions were scheduled from 8:30-11:30 am; the afternoon sessions were from 1:00-4:00 pm followed by the Technical Program Chair's plenary session.

A wide variety of topics were discussed throughout the technical program including: burnup credit, various aspects of waste management and spent fuel handling, ANS standards, safeguards, seismic qualification, dose assessment, MRS, transmutation, artificial intelligence, research reactors, decommissioning, and many more.

IMPRESSIONS/CONCLUSIONS:

Overall, the meetings were very informative in presenting the state-of-the-art technical programs with focus on alternative solutions to the high-level waste dilemma, requirements for success, and the range of alternative nuclear power technologies. It also gave me a chance to meet and exchange information with scientists utilizing latest computer codes related to my present field of work. I also saw the ANS Nuclear Power and Technology Exhibit with more than 70 organizations displaying products, equipment and their services. The ANS Mixed

Low-Level Radioactive Waste Workshop had speakers from Congress, the EPA, the NRC, Commercial Waste Generators, and Defense/DOE Waste Generators and therefore, it provided me with different perspectives on mixed low-level waste management and disposal issues.

A copy of the meeting agenda is attached, and a copy of abstracts of all papers presented during the meeting is available in my office for anyone interested.

PROBLEMS ENCOUNTERED: NONE.

PENDING ACTIONS: NONE.

SIGNATURE




Hengameh Karimi

11/30/90

Date

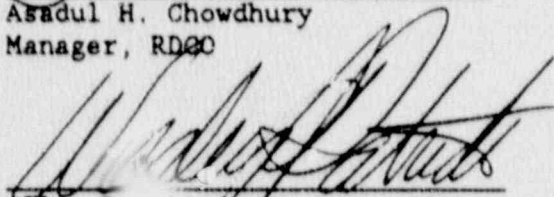
CONCURRENCE



Asadul H. Chowdhury
Manager, RD&O

11/30/90

Date



Allen E. Salting
Director USEM

11/30/90

Date

technical sessions

Monday, November 12
8:30 a.m.

***ANS/NEE Combined Plenary: New Directions for the 1990s.** Session organizer: Loring Mills (EEI). All invited speakers.

Sharon Ballroom Trans., p. 1

Speakers:

- Loring Mills (EEI)
- Jerry Farrington (USCEA)
- Jack Ohanian (Univ of Florida)
- James A. McClure (U.S. Senate)
- Michael R. Deland (White House Council on Environmental Quality)
- Minoru Okabe (JAPC-Japan)

Monday, November 12
1:00 p.m.

***Research Reactor Status,** sponsored by the Isotopes and Radiation Division; cosponsored by the Biology and Medicine Division and the Education and Training Division. Session organizer: Charles C. Thomas, Jr. (Thomas Consult). Chair: Charles C. Thomas, Jr.

Washington Ballroom Trans., pp. 138-147

1:00

Advanced Neutron Source—The Designer's Perspective, F. J. Peretz (MMES), invited

1:30

Advanced Neutron Source—The User's Perspective, John B. Hayter (ORNL), invited

2:00

Postconversion Testing and Power Upgrade of the Ohio State University Research Reactor, Joseph W. Talmagi (Ohio State), invited

2:30

Stationary Neutron Radiography System, Wade J. Richards (SM-ALC), invited

3:00

State University of New York at Buffalo Research Reactor Leak Repair and Modification,

Louis G. Henry, Jr. (BMRC), Charles C. Thomas, Jr. (Thomas Consult)

3:30

A Design Study of the TRR Power Regulating System by LQG/LTR Methodology, Shaw-Cuang Lee, Jyh-Gang Wang (INER-Taiwan)

***Addressing the Shortage of Nuclear Engineers: Results of the National Research Council Study,** sponsored by the Education and Training Division. Session organizer: John Gilligan (NCSU). All invited. Chair: Donald Dudziak (NCSU)

South Cotillion Trans., p. 18

1:00

Speakers:

- Forrest Remick (NRC)
- Bertram Wolfe (GE, San Jose)
- Thomas W. Kerlin, Jr. (Univ of Tennessee)

***Isotope Production in Fusion Reactor Systems,** sponsored by the Isotopes and Radiation Division. Session organizer: Sharon D. Atkin (Westinghouse Hanford). Chair: Sharon D. Atkin

North Cotillion Trans., pp. 148-156

1:00

The Renaissance of Nuclear Medicine, Henry H. Kramer (Kramer), invited

1:20

Comparison of Medical Isotope Production in

Fast and Thermal Reactor Systems, R. E. Schenter (Westinghouse Hanford), invited

1:40

The Use of Fast Reactors for Radioactive Isotope Production, A. V. Zvonarev, B. V. Koloskov, L. A. Kochetkov, V. I. Matveyev, I. P. Matveyenko, E. Ya. Smetanin, Yu. S. Khomyakov, V. A. Cherny (IPPE-USSR), invited

2:00

Isotope Production Test in the Fast Flux Test Facility, D. W. Wootan, H. R. Brager, L. L. Carter, A. H. Lu, F. M. Mann, J. A. Rawlins, R. E. Schenter, F. A. Schmittroth, R. A. Schwarz, R. L. Simons (Westinghouse Hanford), W. Y. Matsumoto (PNL), invited

2:20

Reactor Production of ²⁵²Cf and Transcurium Isotopes, C. W. Alexander, J. Halperin, R. L. Walker, J. E. Bigelow (ORNL), invited

2:40

The Role of University Research Reactors in Isotope Production, S. L. Gunn, P. D. Miller (Univ of Missouri-Columbia), invited

3:00

Production of Short Half-Life Isotopes in Liquid-Metal Reactors, David L. Greenslade (Westinghouse Hanford), invited

3:20

Physics Calculations for a Radioisotope Production/Retrieval System, J. S. Lan, L. L. Carter (Westinghouse Hanford)

3:40

Contributions and Future of Radioisotopes in Medical, Industrial, and Space Applications, Garth L. Tingey (PNL), George P. Dix (Dix), Earl J. Wahlgren (DOE, Germantown), invited

Reductive Exposure Reduction with Robotics and Remote Handling, sponsored by the Remote Systems Technology Division; cosponsored by the Isotopes and Radiation Division and the Radiation Protection and Shielding Division. Session organizer: Robert W. Wiesener (Fluor Daniel). Chair: Robert W. Wiesener

Wilmington Trans., pp. 585-590

1:00

Semiautomatic Spent-Fuel-Handling Machine, Mike Stromberg (CIMCORP)

In deference to non-smokers, all technical session rooms at the meeting will be divided into "smoking" and "no smoking" areas. Smokers are requested to sit on the left side of the room; that is, on the speaker's right), and non-smokers on the right. Ashtrays will be provided only on the left side of the room.

1:20
Remote Handling of Spent Filters in a Commercial Nuclear Power Station. Kenneth R. Brittain (EPRI/NDEC)

1:40
Dose Reduction During Remote Dismantling of Pile Chimneys at BNFL Sellafield. Evan M. Wright, Alex Colquhoun (BNFL-UK)

2:00
Remotely Maintained Waste Transfer Pump. J. C. Eargle (Westinghouse SRC)

2:20
Remote Tooling Applications at the FFTF/IEM Cell. Roger H. Webb (Westinghouse Hanford)

2:40
Remote Maintenance Lessons Learned on Prototypical Reprocessing Equipment. C. T. Kring, S. L. Schrock (ORNL)

***Liquid-Metal Reactor Safety—Past, Present, and Future**, sponsored by the Nuclear Reactor Safety Division. Session organizer: Tris McCall (Westinghouse Hanford). All invited. Chair: Tris McCall

Dover Trans., pp. 343-347

1:00
A Perspective on Progress in Liquid-Metal Reactor Safety. Robert Avery (ANL)

1:25
Safety Aspects of the U.S. Advanced Liquid-Metal-Cooled Reactor Program. Geza L. Gyorey, Richard W. Hardy (GENE)

1:50
An Overview of FFTF Contributions to Liquid-Metal Reactor Safety. A. E. Waiter, A. Padilla, Jr. (Westinghouse)

2:15
EBR-II: Safety Testing as the IFR Prototype. J. I. Sackett (ANL-Idaho)

2:40
Lessons Learned from the Licensing Process for the Clinch River Breeder Reactor Plant. Paul W. Dickson, Jr., George H. Clare (Westinghouse SRC)

3:05
Panel Discussion

***Burnup Credit Allowance in the Storage and Transport of LWR Fuel—Data and Methods**, sponsored by the Nuclear Criticality Safety

Division. Session organizer: Tom Sanders (SNL). Chair: Odelli Ozer (EPRI)

Rockville Trans., pp. 305-312

1:00
Validation of the YAEC Burnup Credit Methodology. Dominic Napolitano, Dariush Adli (YAEC, Bolton)

1:30
Burnup Credit: Computational Schemes and Related Considerations. M. H. Watmough, A. M. Evans (BNFL, Risley-UK), invited

2:00
Reactor Critical Calculations for Validation of Burnup Credit Analysis Methods. John-Paul Renier, Cecil V. Parks (ORNL), invited

2:30
MCNP Criticality Calculations Using Multi-group and Continuous-Energy Cross Sections. Russell B. Kidman (LANL), invited

3:00
Benchmark Data for Validating Irradiated Fuel Compositions Used in Criticality Calculations. S. R. Bierman (PNL), invited

***MRS Facility: Would Repository Collocation Be a Solution?** sponsored by the Fuel Cycle and Waste Management Division; cosponsored by the Biology and Medicine Division and the Nuclear Criticality Safety Division. Session organizer: Jack Scarborough (NRC). Chair: Jack Scarborough

Annapolis Trans., pp. 57-62

1:00
Role of MRS in Reducing Technical Uncertainties in Geologic Disposal. Lawrence D. Ramspott (LLNL), invited

1:30
Public Policy Issues Surrounding Monitored Retrievable Storage. E. W. Colglazier (Univ of Tennessee), invited

2:00
MRS Commission Report—One Year Later. Dale Klein (Univ of Texas, Austin), invited

2:30
Role of Monitored Retrievable Storage in Integrated Waste Management Systems. Lake H. Barrett (DOE), invited

3:00
How to Solve the Problem of Siting Nuclear Waste. Herbert Inhaber (Ecol and Environ)

3:30
Closing Remarks: Luther J. Carter

***Materials Issues in Transuranic Processing**, sponsored by the Materials Science and Technology Division; cosponsored by the Fuel Cycle and Waste Management Division. Session organizer: M. G. Adamson (LLNL). Chair: M. G. Adamson

Baltimore Trans., pp. 237-243

1:00
Crucibles Selected for Pyrochemical Processes at LANL. David F. Bowersox, Joel D. Williams (LANL), invited

1:25
A Review of Recent Material Compatibility Studies at LANL. Mary Ann H. Reimus, Gregory D. Bird, Michael H. West (LANL), Gretchen L. Graef (Univ of Arizona), Michelle D. Ferran (LANL), invited

1:50
Corrosion Studies in Molten Calcium Chloride with Chlorine. D. F. McLaughlin (Westinghouse STC), C. E. Sessions, J. E. Marra (Westinghouse SRC)

2:15
Investigations of Coated Refractory Metals for Plutonium Processing. L. M. Bagaasen (EG&G Rocky Flats), G. L. DePoorter (CSM), K. M. Axler, E. M. Foltyn, J. M. Espinoza (LANL), invited

2:40
Materials Evaluation for a TRU Processing Facility. Steven A. Barker, Earl B. Schwenk, Jr. (Westinghouse Hanford), James R. Divine (PNL)

3:05
Erosion-Corrosion of Waste Storage Tanks During Waste Retrieval. R. R. Elmore (PNL), E. D. Waters (Westinghouse Hanford)

3:30
Materials Selection for Remote Process Equipment in the Hanford Waste Vitrification Plant. M. R. Elmore (PNL)

***Staying Ahead of Nuclear Power Production Cost Increases**, sponsored by the Reactor Operations Division. Session organizer: Donald W. Edwards (YAEC). Chair: D. L. Peoples (Bechtel)

Arlington Trans., 471-476

1:00
Managing Costs at Ginna Station. Robert C. Mecredy (RG&E), invited

1:25
YAEC's View of the Cause and Control of Escalating Nuclear Plant O&M Costs. John D.

Hesseltine, Leo P. Lessard (YAEC, Bolton), invited

1:50

Nuclear: Operating and Maintenance Costs—Trends, Internal Distribution, and Prospects for Control. Chaim Braun, Robert S. Kaminski (UE&C)

2:15

The Art of Being Cost-Effective, Not Cheap. Theodore U. Marston (EPRI), invited

2:40

Containing Operating and Maintenance Expenses at Oconee Nuclear Station. Michael S. Tuckman (Duke Power)

***Nuclear Geophysics—Principles and Applications**, sponsored by the Isotopes and Radiation Division. Session organizer: Ahmed Badruzzaman (SNL). Chair: Ahmed Badruzzaman

Richmond Trans., pp. 157-168

1:00

Recent Developments in Nuclear Oil-Well-Logging Technology. W. R. Mills, D. C. Stromswold, L. S. Allen (Mobil R&D), invited

1:25

The Development of Airborne Gamma-Ray Spectrometry: A Case Study in Technological Innovation and Acceptance. Arthur G. Darnley (GSC-Canada), invited

1:50

Applications of Geochemical Variations in Scientific Drillholes Recorded Using Gamma Ray Spectroscopy. Roger N. Anderson (Lamont-Doherty), invited

2:15

IAEA Nuclear Data Handbook for Nuclear Geophysics Applications. J. S. Schweitzer (Schlumberger-Loll), N. P. Kocherov (IAEA-Austria), invited

2:40

Systematic Effects on Elemental Concentration Logs. James A. Grau, Jeffrey S. Schweitzer (Schlumberger-Doll), Russel C. Hertzog (Schlumberger Well)

2:55

Impact of Elemental Concentration Errors on Geochemical Log Interpretation. Susan L. Herron, Joseph M. Chiaramonte (Schlumberger-Doll)

3:10

Thermal Neutron Absorption Cross Sections for Igneous Rocks at Newberry Caldera, Oregon. Peter Lysne (SNL)

3:25

The Role of Computer Modeling in the Design of Calibration Facilities for Nuclear Logging Tools. John Butler (AEA Petroleum-UK), invited

***PDE Solvers for Parallel Architectures**, sponsored by the Mathematics and Computation Division. Session organizer: Paul Turinsky (NCSU). All invited. Chair: Paul Turinsky

Alexandria Trans., pp. 269-274

1:00

Parallel Computing and the Solution of Partial Differential Equations. William Gropp (ANL)

1:30

Domain Decomposition Algorithms. Barry F. Smith (Courant Inst)

2:00

Parallel Multigrid, Domain Decomposition, and Projection Methods: Are All Similar. Craig C. Douglas (IBM/WRC)

2:30

Multisplitting Iterative Methods and Multiprocessors for the Numerical Solution of PDEs. R. E. White (NCSU)

3:00

A Monte Carlo Method for Elliptic Partial Differential Equations. J. M. DeLaurentis, L. A. Romero (SNL)

3:30

A Monte Carlo Boundary Propagation Method for the Solution of the Poisson Equation. Robert Hiroamoto, Ralph G. Brickner (LANL)

***Biology and Medicine—General**, sponsored by the Biology and Medicine Division. Session organizer: Stan De Filippis (Univ of Georgia). Chair: James B. Stubbs (ORAU-RIDIC)

Kansas Trans., pp. 5-13

1:00

Evaluation of Neural Networks for Parameter Identification from Positron Emission Tomography Scans. L. F. Miller (Univ of Tennessee), G. T. Smith (UTMC), Y. Wu, Robert E. Uhrig (Univ of Tennessee)

1:20

Quantification of Myocardial Blood Flow with Dynamic Positron Emission Tomography. Gary T. Smith, Yuexin Wu, Laurence Miller (UTMC), invited

1:40

Development of Therapeutic Radiopharmaceuticals Containing Isotopes of Rhenium-¹⁸⁶Re HEDP. G. D. Pilcher, D. W. Pipes (Mailincrodt Medical), J. B. Stubbs (ORAU), invited

2:00

Enhanced Blastogenesis by Low-Dose Whole-Body X-Ray Irradiation. Keiichi Ishii (CRIEPI-Japan), Norio Muto, Itaru Yamamoto (Okayama Univ-Japan)

2:20

SOD Activities Enhancement and LPO Inhibition by Low-Dose Radiation. Kiyonori Yamaoka (CRIEPI-Japan), Rei Edamatsu, Akitani Mori (Okayama Univ MS-Japan)

2:40

A New Instrument for Ultra-Sensitive ¹⁴C Tracers. Kenneth H. Purser (US-AMS), Harry E. Gove (Univ of Rochester), invited

3:00

Development of a Beta Dose Monitor Using a Silicon Detector. Manho Chung (Penn State), William A. Jester (Penn State BR), Samuel H. Levine (Penn State)

*Special session

3:20

Hot-Particle Dose Measurement and Calculation. Manho Chung, Samuel H. Levine (Penn State), William A. Jester (Penn State BR)

***Downscaling—Various Perspectives**, sponsored by the Power Division; cosponsored by the Fuel Cycle and Waste Management Division and the Radiation Protection and Shielding Division. Session organizer: Paul Check (Liberty Consult). All invited. Chair: Paul Check

Idaho

Trans., pp. 392

1:00

Speakers:

William E. Steiger, Jr (Lilco, Shoreham)
William E. Murphie (DOE)
Rita W. Bowser (SMUD)
Seymour Weiss (NRC)
A. Clegg Crawford (PSCC)

***Doses from Spent-Fuel Handling, Storage, and Transportation**, sponsored by the Radiation Protection and Shielding Division; cosponsored by the Environmental Sciences Division. Session organizer: R. M. Westfall (ORNL). All invited. Chair: Marvin L. Smith (Virginia Power)

Wisconsin

Trans., pp. 430-437

1:00

Doses from Spent-Fuel Handling, Storage, and Transportation. Alan H. Wells (Nuclear Assurance Corp)

1:25

Characterization and Classification of Spent-Fuel Hardware for Storage and Disposal. Anton S. Fuierer (RG&E)

1:50

Gamma/Neutron Dose Rates near Spent-Fuel Storage Casks/Modules. J. M. Creer, M. A. McKinnon, J. E. Tanner (PNL)

2:15

Status of a Standard for Neutron Skyshine Calculation and Measurement. R. M. Westfall, R. Q. Wright (ORNL), J. Greenborg (Shonka)

2:40

Benchmarking of Dose Rate Calculations for Spent-Fuel Transportation Casks. B. L. Broadhead, M. C. Brady, C. V. Parks (ORNL)

3:05

Shielding the BR-100 Spent-Fuel Shipping Cask. George M. Jacks (B&W)

Thermal Hydraulics—General, sponsored by the Thermal Hydraulics Division. Session organizer: Yassin A. Hassan (Texas A&M). Chair: Yassin A. Hassan

Warren

Trans., pp. 630-643

1:00

Large-Eddy Simulation—Prediction of Fluc-

Monday afternoon — cont'd

tuating Lift and Drag Forces and Comparison with Experiment. John M. Pruitt, Yassin A. Hassan (Texas A&M), David A. Steininger (EPRI)

1:20

Bubbly Flow Velocity Measurements near a Heated Cylindrical Conductor. Robert E. Canaan, Yassin A. Hassan (Texas A&M)

1:40

Full-Field Flow Analysis of Spray Behavior Using Laser Velocimetry. Katey E. Delahunte, Yassin A. Hassan (Texas A&M)

2:00

An Analysis for the Failed Steam Generator Tube Plug. H. C. Yeh, R. F. Keating, R. M. Rosdt, L. E. Hochreiter (Westinghouse)

2:20

An Analysis of Chugging Loads in Containment Systems. Patrick M. Lahey, R. T. Lahey, Jr., Donald A. Drew (RPI)

2:40

The Effects of Fully Implicit Coupling on Heat Conduction Between a Flow Field and Conduction Slab in TRAC-PF1. Lasse C. Wang, Anthony J. Baratta, John H. Mahaffy (Pena State)

3:00

Proof Test on Thermal and Hydraulic Design Reliability of Japanese PWR Fuel Assemblies. Yoshiaki Makihara (MAPI-Japan), Mamoru Akayama (Univ of Tokyo-Japan), Akira Inoue (Tokyo Inst Technol-Japan), Keiji Miyazaki (Osaka Univ-Japan), Masao Oishi, Toshimasa Aoki (NPETC-Japan), Sadaaki Abeta (Mitsubishi, Tokyo-Japan), Keiichi Hori (Mitsubishi, Hyogo-Japan), Tomio Mukawa (NEI-Japan)

3:20

Study of the FTV Exciting Force on Lower Pressure Structures of Internal-Pump-Type BWRs. Tetsuo Yamamoto, Hiroshi Miyano, Takao Fujii (Toshiba NEL-Japan)

3:40

A New Pump Model for Transient Analyses. Rizwan-uddin (Univ of Virginia)

***President's Session: Technology Transfer to the Nuclear Industry.** Session organizers: Max Clemons (DOE). All invited. Chair: L. Don Williams (PNL)

Holross

Trans., p. 3

1:00

Speakers:

Michael D'Agostino (Grumman Corp)
James W. Glasgow (Doub. Muntzing & Glasgow)
M. Guven Yalcintas (ORNL)

* Special session

Ronald Barks (LANL)
Antonelle Joseph (DOE)
E. Jonathan Soderstrom (ORNL)
John C. Corey (Westinghouse SRC)

***Advanced Nodal Methods — A Utility Perspective,** sponsored by the Reactor Physics Division; cosponsored by the Mathematics and Computation Division. Session organizer: Ed Knuckles (FP&L, Juno Beach). Chair: Ed Knuckles

Marshall

Trans., pp. 497-508

1:00

Experience with Advanced Nodal Codes at YAEC. R. J. Cacciopuoti (YAEC, Bolton), invited

1:25

Experiences with Phoenix-P/ANC Modeling at the South Texas Project. D. E. Gore, S. F. Huang (HL&P, Wadsworth), invited

1:50

TU Electric's Core Model. Mickey R. Kilgore, Randall L. Janna, Ausaf Husain (Texas Util, Dallas), invited

2:15

Shutdown Margin Analysis of Chinshan Cycle 9 Using CASMO-3/SIMULATE-3. Arthur S. DiGiovanna (Studvik USA), Jing-Tong Yang (INER, Taiwan), David W. C. Lin (Taipower, Taiwan), invited

2:40

Model Development for Plant Vogtle Utilizing ALPHA/PHOENIX-P/ANC Methodology. Robin D. Jones (SCS)

3:05

CASMO-3/SIMULATE-3 Benchmark on Ringhals Units. Ewa Kurcysz-Ohlsson (SSPB-Sweden), Magnus Johansson (SSPP, Vorebocks-Sweden), Magnus Eriksson, Rolf Berrero, Jan Hanberg (SSPB-Sweden)

3:30

Benchmark of the Westinghouse PHOENIX-P/ANC Computer Codes. Daniel K. Lee (CECo)

4:00 p.m.

***ANSI Presents A New Look at Nuclear Energy Options.** Session organizers: Tom Woods, Jim Huxter (Westinghouse Hanford).

Washington Ballroom

Speakers:

Jack Obanian (Univ of Florida)
Neil Norman (ASPE)
Wally Schultz (NAE)
Tom Downar (Purdue Univ)

Tuesday, November 13
8:30 a.m.

Environmental Restoration and Waste Management—I, sponsored by the Fuel Cycle and Waste Management Division; cosponsored by the Environmental Sciences Division. Session organizers: Julie D'Ambrosia (NJG), Clyde Jupiter (JUPITER Corp). All invited. Chair: Roger P. Whitfield (DOE)

Washington Ballroom Trans., pp. 63-66

8:30

An Overview of the Office of Environmental Restoration and Waste Management. Leo P. Duffy (DOE)

8:50

Educational Initiatives in Environmental Restoration and Waste Management. Susan M. Prestwich (DOE)

9:10

Preliminary Design of a Priority System for DOE Environmental Restoration. Thomas P. Longo (DOE), T. A. Cottoe (JKRA), M. W. Markhofer (ADA), R. P. Whitfield (DOE)

9:30

New Technologies for Environmental Restoration. Thomas D. Anderson (DOE), Don Maier (INEL, EG&G Idaho), Nancy Rothermich (MMES), Julie D'Ambrosia (NJG)

9:50

Assessment and Cleanup of Inactive DOE Sites: The Effect of Regulatory Requirements. John C. Lehr (DOE)

Worldwide Impact of Standards—I, sponsored by the Isotopes and Radiation Division; cosponsored by the Nuclear Criticality Safety Division, the Nuclear Reactor Safety Division, and the Reactor Physics Division. Session organizer: James F. Mallay (Liberty Consult). All invited. Chair: L. Manning Muntzing (Doub. Muntzing & Glasgow)

South Coallion Trans., pp. 169-171

8:30

NUMARC Activities in Nuclear Codes and Standards. Arland L. MacKinney (NUMARC)

8:55

U.S. Government and Industry Cooperation on International Standards. Donald R. Johnson (NIST)

9:20

A Considered Rationale for Consensus Standards. John W. Landis (SWEC)

9:45

ASME Codes and Standards. William J. Woollacott (ASME, NY)

Worldwide Impact of Standards—II, sponsored by the Isotopes and Radiation Division; cosponsored by the Nuclear Criticality Safety Division, the Nuclear Reactor Safety Division, and the Reactor Physics Division. Session organizer: James F. Mallay (Liberty Consult). All invited. Chair: L. Manning Muntzing (Doub. Muntzing & Glasgow)

South Coallion Trans., p. 172

10:20

Speakers:

Manuel Peralta (ANSI)
Donald R. Johnson (NIST)
John W. Landis (SWEC)
William J. Woollacott (ASME)

LMFR Shielding—Past, Present, and Future, sponsored by the Radiation Protection and Shielding Division. Session organizer: Leland L. Carter (Westinghouse Hanford). Chair: Leland L. Carter

North Coallion Trans., pp. 438-446

8:30

A Decade of Radiological and Shielding Experience at the Fast Flux Test Facility. Wilbur L. Bunch (Westinghouse Hanford). invited

9:00

Shielding Studies and LMFBR Development Achievements and Future Trends. M. Salvatores (CEA/CEN Cadarache-France). invited

9:20

Advancements in FBR Shielding—Ten Years in Japan. Nobuo Ohtani, Toju Suzuki (PNC, Oarai-Japan). invited

9:40

Application of the Three-Dimensional Transport Code to Analysis of the Neutron Streaming Experiment. K. Chatani, C. O. Slater (ORNL)

10:00

Neutron Flux Calculations on Fast Breeder Reactors with the DLS Program. Kl. Muller, U. Quade (Interatom-FRG), Daniel Maire (Novatome-France); A. W.

10:20

Current U.S. Activities and Directions in Shielding Design for Liquid-Metal-Cooled Reactors. D. T. Ingersoll (ORNL). invited

*Special session

International Robotics and Remote Handling, sponsored by the Remote Systems Technology Division. Session organizer: John W. Riddington (UES, GA). Chair: Greg Frandsen (WINCO)

Wilmington Trans., pp. 591-598

8:30

Remote Handling and Robotics at the BNFL Sellafield Reprocessing Plant. E. L. Jones (BNFL-UK)

8:50

Development of EMT. An Advanced PIE Apparatus. Yasuharu Nishino, Hidetoshi Amano, Akira Kikuchi, Shingo Tashuro (JAERI-Japan)

9:10

Remote Handling and Robotics Applications in the United Kingdom's Nuclear Industry. J. A. Collis-Smith (GEC ALSTHOM-UK)

9:30

Enhancement of Electromechanical Manipulator Performance by External Sensory Feedback. Taejun Um, Jisup Yoon, Woota Jung, Jaesol Lee (KAERI-Korea)

9:50

Special-Purpose Multifingered Robotic End Effectors. Richard M. Crowder (Univ of Southampton-UK)

10:10

Space Technology for Nuclear and Waste Treatment Applications. Terry N. Haines (Spar Aerospace-Canada)

Liquid-Metal Reactors, sponsored by the Fuel Cycle and Waste Management Division; cosponsored by the Reactor Operations Division. Chair: W.D. Leggett III (Westinghouse Hanford)

Dover Trans., p. 7

8:30

A Decade of Progress in Fast Fuel. W. D. Leggett III, R. D. Leggett (Westinghouse Hanford). invited

8:55

Fast Reactor Fuel and Material Research in Phenix—A Fuel Cycle Assay. J. Marie Chaumont, Maurice Savineau (CEA, Bagnols-France). invited

9:20

A Reexamination of the Incentives for Actinide Burning. Allen G. Croff, Charles W. Forsberg, S. B. Ludwig (ORNL)

Continued

9:45
Phénix in the Future—New Projects. Pierre Coulon, Maurice Savineau (CEA, Bagnols-France), invited

10:10
The Modular ALMR (PRISM) Fuel Cycle. Marion L. Thompson (GENE), invited

10:35
Consequences of External Storage Barrel Leakage on Fuel Management. Jean Michel Pesteil (NERSA Morestel-France), Pierre Coulon (CEA, Bagnols-France), invited

11:00
The Integral Fast Reactor Fuel Cycle. Yoon I. Chang (ANL), invited

***Burnup Credit Allowance in the Storage and Transport of LWR Fuel—Cask Applications**, sponsored by the Nuclear Criticality Safety Division. Session organizer: Thomas Sanders (SNL). Chair: Thomas Sanders

Rockville Trans., pp. 313–321

8:30
Alternative Certification Options for a Burnup-Credit Spent-Fuel Cask. Charles R. Marotta (Marotta Consult), William H. Lake (DOE), Thomas L. Sanders (SNL), invited

9:00
Impact of Uncertainties in the Effects of Burnup on Criticality Safety Licensing Criteria. Roger W. Carlson, Larry E. Fischer (LLNL), invited

9:30
Burnup Credit Analysis of a 31-Assembly Cask. Dominic Napolitano, Dariush Adli (YAEC, Bolton)

10:00
End Effects in the Criticality Analysis of Burnup Credit Casks. M. C. Brady, C. V. Parks (ORNL), C. R. Marotta (Marotta Consult), invited

10:30
Burnup Credit Application for GA-4 Transportation Casks. Jack K. Boshoven, Shiu-Der Su (General Atomics), invited

11:00
Burnup Credit Feasibility for BWR Spent-Fuel Shipments. B. L. Broadhead (ORNL)

Operational Reactor Safety, sponsored by the Nuclear Reactor Safety Division; cosponsored by the Reactor Operations Division. Chair: Stuart Rose (Duke Power)

Annapolis Trans., pp. 348–354

8:30
A New Feedwater Control/Isolation Scheme to Reduce Steam Generator Thermal Transients. Arthur P. Ginsberg, Srivatsan Nadipuram, Thomas Schmeiser, Charles Hayes, Ralph Orzo (Consolidated Edison, Buchanan), James Simpson, Seenu Srinivasan (Westinghouse NATD)

9:00
Analysis of the Turbine Trip Test Performed at the Chinshan Power Station Unit 1 with Plant Analyzer. S. J. Wang, C. S. Chien (INER-Taiwan), J. Y. Jang (Taipower-Taiwan)

9:30
Palisades Technical Specification Conversion from Custom to New Industry Standard. Daniel J. Foley (ABB C-E), Barry Young (Consumers Power, Palisades)

10:00
Analysis of Vortex Phenomena in PWRs at Reduced Inventory Conditions. Gary W. Waldrep, Robert W. Field (APS)

10:30
One-Dimensional Kinetics Modifications for BWR Reload Methods. Vinod Chandola, James D. Robichaud, Mark P. LeFrancis (YAEC)

11:00
Oyster Creek Fuel Thermal Margin During Core Thermal-Hydraulic Oscillations. John D. Dougher (GPU Nuclear, NJ)

***Enhancing Professionalism in Nuclear Operations**, sponsored by the Reactor Operations Division; cosponsored by the Education and Training Division and the Human Factors Division. Session organizer: Glenn Litzenberger (RG&E, Ginna). All invited. Chair: Glenn Litzenberger

Baltimore Trans., p. 477

8:30
Speakers:
Steve Bram (NYPA, Buchanan)
Bill Josiger (NYPA, White Plains)
James Sniezek (NRC)
Frank Maciуска (PROS)
William R. Corcoran (TENERA, Windsor)

Materials Science and Technology—General-I, sponsored by the Materials Science and Technology Division. Chair: T. T. Claudson (PNL)

Arlington Trans., pp. 244–249

8:30
European Collaboration on Mixed Nitride

Fuel. C. Prunier, P. Bardelle (CEA/CEN Cadarache-France), K. Richter (ITE-FRG), R. W. Stratton, G. Ledergerber (Scherrer Inst. Villigen-Switzerland)

9:00
Synthesis, Sintering, and Characterization of Uranium-Plutonium Mononitride. P. Bardelle, C. Prunier (CEA/CEN Cadarache-France)

9:30
Fast Reactor Testing Thermionic Fuel Element Components for Space Power. L. A. Lawrence (Westinghouse Hanford) A. R. Veca (General Atomics)

10:00
Dispersion-Strengthened Cu-Y₂O₃ Alloys for High-Heat-Flux Applications. M. S. Nagorka, C. G. Levi, G. E. Lucas (Univ of California, Santa Barbara)

10:30
Observations on Hydrogen Generation in Boron Carbide/Aluminum/Water Systems. Michael G. Bale, Karl Schafer (AAR B&P)

Methods in Neutral and Charged Particle Transport, sponsored by the Mathematics and Computation Division; cosponsored by the Isotopes and Radiation Division and the Radiation Protection and Shielding Division. Chair: Warren F. Miller (LANL)

Richmond Trans., pp. 175–285

8:30
Response Matrix Monte Carlo for Electron Transport. Clinton T. Ballinger (Ballinger), William R. Martin (Univ of Michigan)

8:50
Monte Carlo Next-Event Estimates from Thermal Collisions. John S. Hendricks, Richard E. Prael (LANL)

9:10
On the Iteration Method for Solution of Void Problems in Neutron Transport Calculations. D. V. Altiparmakov (Boris Kidric Inst-Yugoslavia), M. I. Markovic (Univ of Belgrade-Yugoslavia)

9:30
An R-Function Method for Neutron Transport Calculations of Toroidal Systems. D. V. Altiparmakov (Boris Kidric Inst-Yugoslavia), M. I. Markovic (Univ of Belgrade-Yugoslavia)

9:50
Traveling Double Layers as Limits of Exact Solutions to the Nonlinear Vlasov Equations. M. L. Buchanan, J. J. Dornig (Univ of Virginia)

10:10
Random Number Stride in Monte Carlo Calculations. John S. Hendricks (LANL)

International Safeguards for High-Level Wastes and Spent-Fuel Disposal, sponsored by the Isotopes and Radiation Division; cosponsored by the Fuel Cycle and Waste Management Division. Session organizer: K. K. S. Pillay (LANL). Chair: K. K. S. Pillay

Alexandria Trans., pp. 173-184

8:30

A Safeguardable Resource Management Scenario for Spent Fuels. K. K. S. Pillay (LANL), invited

8:50

Quantities and Characteristics of Domestic Spent Fuel and High-Level Waste. Karl J. Notz, Royes Salmon (ORNL), R. Scott Moore (ASG), invited

9:10

A Proposal for Technical Criteria for Termination of Safeguards for Materials Categorized as Measured Discards. A. Fattah, N. Khlebnikov (IAEA-Austria), invited

9:30

International Safeguards Strategies Related to the Disposal of High-Level Waste. David W. Crawford, Kenneth Sanders (DOE), invited

9:50

Assay of Heterogeneous Radioactive Wastes by Low-Resolution Tomographic Gamma Scanning. Robert J. Estep (LANL), invited

10:10

Applied Research in Neutron Coincidence Collars. S. Z. Qiao, J. E. Stewart, H. O. Menlove, R. H. Augustson (LANL)

10:30

Performance of the SDT Fissile Assay System for Simulated Spent LWR Fuel. D. R. Harris, F. Rodriguez-Vera, N. M. Abdurrahman, Y.-D. Lee, C. J. Werner, R. E. Slovacek, R. C. Block (RPI)

10:50

The Determination of Plutonium and Its Isotopic Composition in Spent-Fuel Elements by Radiometry. S. Z. Qiao (LANL)

Thermal Hydraulics of Severe Accidents, sponsored by the Thermal Hydraulics Division; cosponsored by the Nuclear Reactor Safety Division. Session organizer: Bruce Spencer (ANL). Chair: Bruce Spencer

Kansas Trans., pp. 644-652

8:30

The MELTSPREAD-1 Computer Code for the Analysis of Transient Spreading in Containments. Mitchell T. Farmer, James J. Sienicki, Bruce W. Spencer (ANL)

9:00

CORQUENCH: A Model for Gas Sparging-Enhanced, Melt-Water, Film-Boiling Heat Transfer. Mitchell T. Farmer, James J. Sienicki, Bruce W. Spencer (ANL)

9:30

Core Structure Heatup and Material Relocation in a BWR Short-Term Station Blackout Accident. Rodney C. Schmidt, Sudip S. Dosanjh (SNL)

10:00

Simulation of the Expansion Phase of Steam Explosions Using the K-FIX(GT) Code. Yousef M. Farawila, Said I. Abdel-Khalik,

Peter J. Halvorson (Georgia Tech)

10:30

A New Theory of a Propagating Trigger of Steam Explosions. Yousef M. Farawila (Georgia Tech)

11:00

The Effect of CRD Flow on Severe-Accident Mitigation in BWRs. D. H. Kim, M. Z. Podowski, R. T. Luhey, Jr. (RPI)

Security Hardware—Applications and Reliability Improvement, sponsored by the Power Division. Session organizer: Frank M. Carpeny (PSCI). Chair: Frank M. Carpeny

Idaho

Trans., pp. 393-397

8:30

Security Alarm Communication and Display Systems Development. Ivan G. Waddoups (SNL), invited

8:55

Available Hardware for Automated Entry Control. James P. Holmes (SNL)

9:20

Automated Passage Control for Security, Cost Efficiency, and Convenience. David C. Smart (Campbell Eng), invited

9:40

Video Motion Detection for Physical Security Applications. John C. Mattar (SNL)

10:05

A Nuisance Alarm Data System for Evaluation of Intrusion Detectors. W. Kenneth Ream (SNL)

Artificial Intelligence in Nuclear Plants, sponsored by the Human Factors Division. Session organizer: Mohammad Modarres (Univ of Maryland). Chair: Mohammad Modarres.

Wisconsin

Trans., pp. 122-128

8:30

Reactor Diagnostics Rule Generation Through Pattern Recognition. Jaques Reifman, John C. Lee (Univ of Michigan), Mark Mills Award Winner, invited

8:55

A Qualitative and Quantitative Model-Based Diagnosis System. Akira Saiki, Kazunori Sasaki (Mitsubishi Electric-Japan)

9:20

Rule-Induction Analysis and Expert System Constructions. B. D. Zimmerman, G. Jansen, Jr., M. J. Moen (Westinghouse Hanford)

9:45

A Knowledge-Based System for BWR Power Maneuver Planning. Mitsuo Kinoshita, Takaharu Fukuzaki (Hitachi ERL-Japan), Akira Nishimura (Hitachi Works-Japan), Tsutomu Matsuki (Hitachi/Omika-Japan)

10:10

Nuclear Power Plant Monitoring Using a Model-Based System. M. Ragheb, G. W. Lee

Special session

(Univ of Illinois), G. Dischler, F. Niziolek, M. Parker (Illinois Dept of Nucl Safety)

Environmental Sciences—General, sponsored by the Environmental Sciences Division; cosponsored by the Fuel Cycle and Waste Management Division. Chair: Carl Mazzola (SWEC)

Warren

Trans., pp. 30-33

8:30

Liability of Corporate Officers Under Federal Environmental Laws. Kristen R. Thompson (EBB)

8:50

An Overview of the Savannah River Site's Environmental Monitoring Computer Automation Project. Robert Lorenz, Michael W. Stafford (Westinghouse SRC), William L. MacCreedy (Consort Technol)

9:10

Derivation of Exposure Limits for Toxic Gases. L. B. Sasser, D. D. Mahlum (PNL), invited

9:30

Radium-226/Radon-222 Activity Concentration Disequilibrium in Soils. David E. Holcomb, Thomas E. Blue (Ohio State)

DOE Environmental Restoration Program, sponsored by the Environmental Sciences Division; cosponsored by the Fuel Cycle and Waste Management Division.

Warren

Trans., pp. 34-37

10:05

Measurement of the Natural Background in the Soil Around the Mound Plant. Roy Eckart, Ali Motahamelian (Univ of Cincinnati)

10:25

Demonstration of a Polymeric Barrier System for Soil Erosion Control. L. A. Rieser, J. M. Christenson (Univ of Cincinnati), M. E. Crotzer (Westinghouse MCO)

10:45

Management Tool for the Site Restoration and Remedial Action Programs. Robert Janke, Roy Eckart, Randy Janke (Univ of Cincinnati)

Thermal Hydraulics of Noncommercial Reactors, sponsored by the Thermal Hydraulics Division. Session organizer: Thomas Moskal (B&W Alliance). Chair: Thomas Moskal

Holmes

Trans., pp. 653-661

8:30

Design of a Full-Scale Model Fuel Assembly for Full-Power Production Reactor Flow Excursion Experiments. James E. Blake, Gregory C. Rush (B&W Alliance), Charles A. Nash (Westinghouse SRC)

9:00

Steady-State and Loss-of-Pumping Accident Analysis of the NPR Design. Kevin J.

Tuesday morning—cont'd

Maloney, R. J. Pryor (SNL)

9:30

Sensitivity Studies of Loss-of-Coolant Accidents in the Savannah River Production Reactors, J. N. Edwards, F. E. Mo'ley, M. M. Morgan, T. D. Knight, S. R. Fischer (LANL)

10:00

Simulation of Three-Dimensional Hydrodynamic Components with a One-Dimensional Transient Analysis Code, Roy A. Shaw

(LANL), Cliff B. Davis (INEL, EG&G Idaho)

10:30

K-ReactoR Emergency Coolant System Response During a Double-Ended Guillotine-Break LOCA, Salvador B. Rodriguez (LANL)

11:00

Flow Instability Analysis in the Advanced Test Reactor, B. G. Miller, R. G. Ambrosek (INEL, EG&G Idaho)

Reactor Analysis Methods, sponsored by the Reactor Physics Division; cosponsored by the Mathematics and Computation Division. Chair: Charles T. Rombough (CTR Tech Svc)

Marshall

Trans., pp. 509-524

8:30

Validation of the Analytical Methods in the LWR Code BOXER for Gadolinium-Loaded Fuel Pins, J. M. Paratte, J. J. Arkuszewski (Scherrer Inst-Switzerland), B. K. Kamboj, J. M. Kalfelz, S. I. Abdel-Khalik (Georgia Tech)

8:50

A Core Burnup Simulation Method for Reload BWR Fuel Optimization, Kazuki Hida (Toshiba IEC-Japan), Ritsuo Yoshioka (Toshiba IEC-Japan)

9:10

Whole-Core Neutronics Modeling of a TRIGA Reactor Using Integral Transport Theory, Kevin N. Schwinkendorf (Westinghouse Hanford)

9:30

BWR Power Transient Optimization with PRESTO-POWERMAX, Mabruk Methnani (ABB Atom AB-Sweden)

9:50

Automatic Shuffling for BWR Core Design Using SIMULATE-3, Suetsugu Iyagawa (Toden-Japan), invited

10:10

Systematic Lattice Cell and Fuel Assembly Homogenization for Nodal Diffusion Methods, Hongbin Zhang, Rizwan-uddin, J. J. Dorning (Univ of Virginia)

10:30

Computer Program for Automatic Generation of BWR Control Rod Patterns, Mehmet S. Taner, S. H. Levine, M.-Y. Hsiao (Penn State)

10:50

The Impact of ENDF/B-V Fission Spectrum Parameter Uncertainty on the Prediction of Fast Reactor Burnup Performance, T. J. Downar, J. Broda, J. Kritzer (Purdue Univ)

11:10

KRAM, A Lattice Physics Code for Modeling the Detailed Depletion of Gadolinia Isotopes in BWR Lattice Designs, Dave Knott, Anthony Baratta (Penn State)

9:00 a.m.

ANS/NEE Combined Special Session: The New Order. All invited. Chair: Eugene I. McGrath (Consolidated Edison)

*International Ballroom East
Washington Hilton Hotel*

Speakers:

Alan R. Holt (Ontario Hydro)
Kenneth M. Carr (NRC)
John B. Yasinsky (Westinghouse)
Anthony V. Leness (Merrill Lynch)

Tuesday, November 13
1:00 p.m.

***Environmental Restoration and Waste Management—II**, sponsored by the Fuel Cycle and Waste Management Division; cosponsored by the Environmental Sciences Division. Session organizer: Julie D'Ambrosia (NJG), Clyde Jupiter (JUPITER Corp). Chair: Dillard P. Sliptor (Advanced Sciences)

Washington Ballroom Trans., pp. 63-66

1:00

The U.S. Department of Energy Environmental Restoration and Waste Management Five-Year Plan, Paul Grimm (DOE), invited

1:20

RCRA Closure of Land-Based Units at the Oak Ridge Y-12 Plant, J. E. Stone (MMES), invited

1:40

Closure and Corrective Action at Surface Impoundments Within the SRS, Beth Wheat, L. F. Boons (Westinghouse SRC), invited

2:00

Remedial Investigation of Clinch River and Watts Bar Reservoir Contamination, B. L. Kimmel, D. W. Swindle, Jr. (ORNL), invited

2:20

Clean Soil at Eniwetok and Johnston Atolls, Edward T. Bramlitt (Defense Nuclear Agency)

***ANS Standards: The Consensus Process in Action—I**, sponsored by the Isotopes and Radiation Division; cosponsored by the Nuclear Criticality Safety Division, the Nuclear Reactor Safety Division, and the Reactor Physics Division. Session organizer: James F. Malley (Liberty Consult). All invited. Chair: Nancy M. Trahey (NIST)

South Coalition Trans., pp. 185-188

1:30

NRC and Voluntary Standards, Guy A. Arlotto (NRC)

1:55

The Consensus Process for ANS Standards, Walter H. D'Ardenne (GE, San Jose)

2:20

A National Standard from the Other Side (The Working Group Side), Norman Weber (Sargent & Lundy)

2:45

The Value of Standards Evolution in Today's Nuclear Industry, Charles H. Moseley, Jr. (CP&L, New Hill)

***ANS Standards: The Consensus Process in Action—II**, sponsored by the Isotopes and Radiation Division; cosponsored by the Nuclear Criticality Safety Division, the Nuclear Reactor Safety Division, and the Reactor Physics Division. Session organizer: James F. Malley (Liberty Consult). All invited. Chair: Nancy M. Trahey (NIST)

South Coalition Trans., p. 189

3:10

Speakers:

Arlond L. MacKinney (NUMARC)
Guy A. Arlotto (NRC)
Walter H. D'Ardenne (GE, San Jose)
Norman Weber (Sargent & Lundy)
Charles H. Moseley, Jr. (CP&L)

Mobile Robots, sponsored by the Remote Systems Technology Division. Session organizer: Harvey B. Meieran (PHD Technol). Chair: Harvey B. Meieran

Wilmington Trans., pp. 599-604

1:00

Mobile Robots for the Nuclear Industry—A 1990 Status Report, Harvey B. Meieran (PHD Technol)

*Special session

1:20

Design and Development of a Walking Robotic Vehicle, Nikolay Shkolnik (Quest)

1:40

An Advanced Semiautonomous Robotic System for Hazardous Response Work for Decontamination and Decommissioning, Carl Crane, James F. Tulenko (Univ of Florida)

2:00

Principles of Designing Mobile Robots for Nuclear Applications: Some Soviet Development Projects, E. O. Adamov, V. G. Ivanov (IPE-USSR), Harvey B. Meieran (PHD Technol)

2:20

Offshore Telerobotic Equipment Shows Potential for Nuclear Use, Charles R. Yemington (DSI)

2:40

Telepresence and Teleoperation, H. McIvaine Parsons (Essex)

***Funding Consensus Granted**, sponsored by the Power Division. Session organizers: Ann S. Bisconti (USCEA), Nancy J. Porter (Sorrento, San Diego). All invited. Chair: Ann S. Bisconti (USCEA)

Dover Trans., p. 398

1:00

Speakers:

James L. Wolt (The Alliance to Save Energy)
George T. Frampton, Jr. (Wilderness Society)
Paul Centotella (Ohio Consumer Council)
William G. Council (TU Electric)
Jarvis D. [unclear] (Westinghouse Energy Systems)
Alan Fitzsimmons (DOE)

***Barney Credit Allowance in the Storage and Transport of LWR Fuel-Post, Measurements, and Applications**, sponsored by the Nuclear Criticality Safety Division. Session organizer:

Thomas L. Sanders (SNL). Chair: Robert Wilson (NRC)

Rockville Trans., pp. 322-329

1:00 Feasibility of Spent LWR Fuel Subcritical Measurements by the Californium Noise Method. J. T. Mihakzo, B. L. Broadhead (ORNL)

1:30 Subcritical Measurements of Spent-Fuel Shipping Casks. Gregory D. Spriggs (LANL), invited

2:00 A Benchmarked Multipurpose Burnup Meter. Alan H. Wells (Nucl Assurance Corp)

2:30 Increased Enrichment Through Spent-Fuel Pool Checkerboarding at the Davis-Besse Nuclear Power Station. Robert J. Borland (Toledo Edison), invited

3:00 Burnup Credit in the Central Storage Facility for Spent Fuel in Sweden. Hans Forsstrom (SNFW-Sweden), Lennart Agrenius (Agrenius Eng-Sweden), Sture Helmersson (ABB Atom AB-Sweden), invited

3:30 Effect of Axial Burnup on Fuel Storage Rack Burnup Credit Reactivity. William A. Boyd, Mark W. Fecteau (Westinghouse, Monroeville)

Accident Analysis, sponsored by the Nuclear Reactor Safety Division. Chair: David Bradley (SNL)

Annapolis Trans., pp. 355-369

1:00 Laguna Verde Closure of all MSIV Transient Analyses with TRAC-BF1. Juan Luis Francois, Jose Javier Escamilla, Oscar Barceas (ITE-Mexico)

1:20 Reactivity Events in Soviet-Designed Pressurized Water Reactors (VVERs). W. C. Horak (BNL), Jose March-Leuba (ORNL), L. C. Oakes (EPRI)

1:40 EBR-II Core Damage Potential for Double Pump Faults. J. P. Herzog (ANL)

2:00 Best-Estimate Analysis of a Small-Break Loss-of-Coolant Accident for a PWR Plant. M. Ragheb, A. Ikononopoulos, B. G. Jones (Univ of Illinois), S. A. Ho, R. Endicott

(PSE&G, Hancock's Bridge)

2:20 Simulation of IAEA's Third Standard Problem Exercise (SPE-3) on RELAPS/MOD3. Parvez Salim, Y. A. Hassan (Texas A&M)

2:40 Station Blackout Simulation Model for a BWR Plant. M. Ragheb, O. Uluyol, B. G. Jones (Univ of Illinois), S. A. Ho, R. Endicott (PSE&G, Hancock's Bridge)

3:00 Analysis of Long-Term Station Blackout at Peach Bottom Using MELCOR. I. K. Madni (BNL)

3:20 Assessment of Ice-Condenser Containment Performance Issues. Hossein P. Nourbakhsh, John R. Lehner (BNL), John Lane (NRC)

*Training Issues for the 1990s, sponsored by the Reactor Operations Division; cosponsored by the Education and Training Division. Session organizer: G. W. Scholand (Westinghouse, Zion). All invited. Chair: G. W. Scholand

Baltimore Trans., p. 478

1:00

Speakers:

- Susan Shankman (NRC)
- Bob Evans (NUMARC)
- Ron Owens (INPO)
- Glenn Litzberger (RG&E, Ginn)
- Leo Sain (DOE)
- Frank Maciуска (PROS)

*Ten Years of Advances in LMR Materials—I, sponsored by the Materials Science and Technology Division. Session organizer: Jerry L. Ethridge (Westinghouse Hanford). Chair: Jerry L. Ethridge

Arlington Trans., pp. 255-263

1:00

Fast Flux Test Facility Core System. J. L. Ethridge, R. B. Baker, R. D. Leggett, A. L. Pitner, A. E. Waltar (Westinghouse Hanford)

1:25

Cladding Inner Surface Wastage for Mixed-Oxide LMR Fuel Pins. L. A. Lawrence, F. E. Bard, N. S. Cannon (Westinghouse Hanford)

1:50

Dimensional Changes in FFTF Austenitic

Cladding and Ducts. Bruce J. Makenas, Steve A. Chastain, Brent C. Gneiting (Westinghouse Hanford), invited

2:15

Performance of FFTF Driver and Prototype Driver Fuels. R. B. Baker, F. E. Bard, J. L. Ethridge (Westinghouse Hanford)

2:40

A Decade of Advances in Metallic Fuel. B. R. Seidel, L. C. Walters (ANL)

3:05

Achievement of LMFBR Fuel Technology. M. Katsuragawa, S. Shikakura, S. Nomura, T. Asaga, S. Ukai, H. Kaneko (PNC, Oarai-Japan), invited

3:30

Progress in Materials Development Aimed to Increase Fuel Burnup in the BN-600 Fast Reactor Core. Yu. V. Konobeev (IPPE-USSR), invited

Thermal-Hydraulic Aspects of Passive Safety and New-Generation Reactors—I, sponsored by the Thermal Hydraulics Division; cosponsored by the Nuclear Reactor Safety Division. Session organizers: S. Michael Modro, V. Ransom (INEL, EG&G Idaho), L. S. Michael Modro

Richmond Trans., pp. 662-672

1:00

Accident Analyses for a Double-Flat-Core-Type HCLWR. Tsutomu Okubo, Takumachi Iwamura (JAERI-Japan), Takayuki Suemura (MAPI-Japan), Fujio Hiraga (Hokkaido Univ-Japan), Yoshio Murao (JAERI-Japan)

1:25

Transient Response of a 145-Fuel-Assembly Advanced Light Water Reactor. Mark A. Rinckel (B&W)

1:50

Evaluation of ECCS Performance for an SBWR. Nobuaki Abe, Kenji Arai (Toshiba NEL-Japan), Ryouichi Hamazaki, Hideo Nagasaka (Toshiba IEC-Japan)

2:15

TRACG Prediction of Gravity-Driven Cooling System Response in the SBWR/GIST Facility LOCA Tests. Md. Alamgir, J. G. M. Andersen, A. I. Yang, B. S. Shiralkar (GE, San Jose)

2:40

Measurement of Convective Heat Transfer Coefficients in a Primary Containment Vessel with Outer Pool. Toru Fukui, Yoshiyuki Kataoka, Shigeo Hatamiya (Hitachi ERL-Japan)

3:05

AP600 Passive Residual Heat Removal Heat Exchanger Test. M. M. Corletti, L. E. Hochreiter (Westinghouse), D. Squarer (Westinghouse STC)

3:30

Applicability of RELAP5 to Advanced Passive Reactor Designs. R. J. Beelman (INEL, EG&G Idaho)

Natural Circulation in Reactor Systems—I, sponsored by the Thermal Hydraulics Divi-

sion. Session organizer: K. Almenas (Univ of Maryland). Chair: K. Almenas

Alexandria Trans., pp. 682-691

1:00

Natural Circulation Demonstration Testing for the EAGLE-2000 HWR Plant Design. R. D. Coffield, B. Minushkin, J. Gilmore, J. E. Schmidt (Westinghouse AES)

1:30

Scaling and Design of a Transparent Two-Phase Natural-Circulation Loop. Thomas W. Eichenberg, J. N. Reyes, Jr. (Oregon State Univ)

2:00

Modeling of Natural Circulation and Steam Condensation Following a LOCA. Joel Weisman, C. Qian (Univ of Cincinnati)

2:30

Influence of Noncondensable Gas on Heat Removal from the Primary of a PWR. K. Umringer, R. Mandl, B. Schon (Siemens/KWU-FRG)

3:00

Development Assessment of RELAP5/MOD3 Using the Semiscale Natural Circulation Tests. K. E. Carlson (INEL, EG&G Idaho)

3:30

Pre-Test Analysis of Natural Circulation on the PWR Model PACTEL with Horizontal Steam Generators. Timo Kervinen, Vesa Riikonen (Technical Resch Ctr-Finland), Timo Rittonummi (Lappeenranta-Finland)

***Labeling Techniques and Use of Monoclonal Antibodies in Medical Diagnostic Imaging**, sponsored by the Biology and Medicine Division. Session organizer: Stan De Filippis (Univ of Georgia). Chair: Lee C. Washburn (ORAU)

Kansas Trans., pp. 14-17

1:00

Radiolabeled Monoclonal Antibodies for Cancer Diagnosis and Therapy—An Overview. Lee C. Washburn (ORAU), invited

1:30

Comparison of Tumor-Absorbed Doses in Xenograft-Bearing Nude Mice Using Mini-TLDs and Integrated Tumor Time-Activity Levels. James B. Stubbs, Janice P. Watkins, Yu-Chen C. Lee (ORAU), Barry W. Wessels (George Washington Univ MC), Lee C. Washburn (ORAU)

2:00

Quantitative SPECT and Dosimetry of Radiolabeled Antibodies. Peter K. Lechner (Johns Hopkins), invited

2:30

Isotope Delivery Using Molecular Recognition Fusion Peptides. Vernon L. Alvarez, Robert D. Radcliffe, John D. Rodwell (CYTOGEN), Linda C. Knight (Temple Univ Hosp), invited

***Safeguards Aspects of DOE Facility Upgrades**, sponsored by the Isotopes and Radia-

tion Division; cosponsored by the Power Division. Session organizer: Richard D. Peavy (DOE). All invited. Chair: Richard D. Peavy (Idaho) Trans., pp. 190-195

1:00

Using ASSESS to Support an Upgrade. Rokaya Al-Ayat (LLNL), Mark K. Snell (SNL)

1:30

Concepts for an Effective Insider Protection Program. M. P. Billings, W. L. Delvin, C. J. Udell (Westinghouse Hanford)

2:00

Integrated Safeguards and Security for the INEL Special Isotope Separation Plant. Gerald F. Warner (WINCO), Neil R. Zack (LANL)

2:30

Design Considerations for Nuclear Materials Control and Accounting Systems. James R. Lemley, Jonathan B. Sanborn, David M. Gordon (BNL)

3:00

SICADS: Site-Independent Configurable Alarm Display System. M. Rodema Ashby, Steven J. Weissman (SNL)

Methods in Reactor Physics and Thermal Hydraulics, sponsored by the Mathematics and Computation Division; cosponsored by the Reactor Physics Division and the Thermal Hy-

Tuesday afternoon—cont'd

Geomatics Division. Chair: Michael Doster (NCSU)

Wisconsin Trans., pp. 286-297

1:00

Collision Probability Method in Arbitrary Geometries—Preliminary Results. Jasmina L. Vujic, Roger N. Blomquist (ANL)

1:20

Nonsingular Numerical Solutions of the Integral Transport Equation. Y. W. Na, K. W. Cho, A. Shapiro (Univ of Cincinnati)

1:40

Experience with the TR(k)BR(n) Vector/Parallel Sparse Matrix Solution Algorithm. H. Makowitz, G. L. Mesina (INEL, EG&G Idaho)

2:00

Evaluation of a Central-Difference-Like Method for the Solution of the Convection-Diffusion Equation. Constantine P. Tzanos (ANL)

2:20

Nonlinear Nodal Two-Phase Thermal Hydraulics and Nodal Neutron Kinetics. Rizwan-uddin, J. Dornig (Univ of Virginia)

2:40

Calculation of BWR Limit Cycle Amplitude Using Galerkin's Method. B. Damiano, J. March-Leuba (ORNL), J. A. Euler (Univ of Tennessee)

*Geographic Information Systems, sponsored by the Environmental Sciences Division. Session organizer: Larry R. Tinney (EG&G Energy, Las Vegas). Chair: David Hayes (Westinghouse SRC)

Warren

Trans., pp. 38-43

1:00

Geographic Information Systems and Remote Sensing Tools for Improving Management Decision Making. John E. Estes (Univ of California, Santa Barbara), invited

1:20

Remote Sensing and GIS Technology: Applications for Site Characterization of Yucca Mountain. C. Elaine Ezra (EG&G Energy, Las Vegas), Claudia M. Newbury, Gary D. Roberson (DOE, Las Vegas), David W. Brickley, Susan L. Robde (EG&G Energy, Las Vegas)

1:40

Using a GIS for Siting a Low-Level Radioactive Waste Disposal Facility. Damon D. Judd, Amy Haak, Kim Johnson (Morrison-Knudsen), invited

*Special session

2:00
The Reach Pollutant Assessment Program.
William B. Samuels (SAIC, McLean)

2:20
Emergency Response and Environmental Ap-
plications of GIS. Robert G. Best, Al L.
Guber, Doug H. Kliman, Steve M. Kowal-
kowski, Susan L. Rohde, Larry R. Tinney
(EG&G Energy, Las Vegas)

*A Geographic Information System Dem-
onstration Session, sponsored by the Environ-
mental Sciences Division. Session organizer:
Larry R. Tinney (EG&G Energy, Las Vegas).
All invited. Chair: Larry R. Tinney

Warren *Trans.*, p. 44

2:40
Speakers:

Robert Best (EG&G Energy, Las Vegas)
Elaine Ezra (EG&G Energy, Las Vegas)
Al Guber (EG&G Energy, Las Vegas)
Kris Lebofsky (SAIC, McLean)
William Samuels (SAIC, McLean)

*Radioactive Waste Management in Canada,
sponsored by the Fuel Cycle and Waste Man-
agement Division. Session organizers: P. D.
Stevens-Guille (Ontario Hydro-Canada), J. S.
Tulenko (Univ of Florida). All invited. Chair:
J. S. Tulenko (Univ of Florida)

Holmes *Trans.*, pp. 77-83

1:00
Radioactive Waste Management in Canada—
Scene, Strategy, and Outlook. D. W. Souther
(Ontario Hydro-Canada)

1:25
Used-Fuel Management in Canadian Nuclear
Utilities. P. D. Stevens-Guille (Ontario
Hydro-Canada), G. A. Plume (New Brunswick
Pwr-Canada), N. Macici (Hydro Quebec-
Canada)

1:50
Disposing of Canada's Used Fuel. David F.
Torgerson (AECL, Whiteshell-Canada)

2:15
Radioactive Waste Transportation Package
Development by a Utility. Marty Gavin,
Richard Sauve, Jim Tulk (Ontario Hydro-
Canada)

2:40
Current Issues in the Management of Low-
and Intermediate-Level Radioactive Wastes
from Ontario Hydro's CANDU Reactors.
John P. Krasznai, Brian R. Vaughan, Angus
S. Williamson (Ontario Hydro-Canada)

*Reactor Physics Standards—Need and
Status—1, sponsored by the Reactor Physics
Division. Session organizer: Dimitrios
Cokinos (BNL). All invited. Chair: Dimitrios
Cokinos

Marshall *Trans.*, pp. 525-532

1:00
Neutron Standard Cross Sections in Reactor

Physics—Need and Status. A. D. Carlson
(NIST)

1:30
General-Purpose Nuclear Data Evaluations
for ENDF/B-VI: Impact of Cross-Section
Standards. Phillip G. Young (LANL)

2:00
Standards for Reference Reactor Physics Mea-
surements. D. R. Harris (RPI), D. M.
Cokinos (BNL), V. Uotinen (B&W)

2:30
Kinetic Parameter Standards for Reactor
Physics Analyses. D. M. Cokinos (BNL), D.
R. Harris (RPI), E. R. Knuckles (FP&L)

3:00
Fission Product Chain Yields and Delayed

Neutrons: ANS Standards 5.2 and 5.8. T. R.
England (LANL), B. F. Rider (Rider Con-
sult), M. C. Brady (ORNL)

3:30
Reactor Physics Standards: The Key to Suc-
cessfully Dealing with Technical Diversity.
Edward R. Knuckles (FP&L)

*Student Design Competition, sponsored by
the Education and Training Division. Session
organizer: Walt Meyer (Syracuse Univ). All
invited. Chair: Walt Meyer

Colorado

1:00



Wednesday, November 14

8:00 a.m.

***OCRWM Program Status**, sponsored by the Fuel Cycle and Waste Management Division. Session organizer: J. S. Tulenko (Univ of Florida). All invited. Chair: Franklin G. Peters (DOE)

South Cotillion Trans., pp. 84-86

8:00
Role of the MRS—An Overview, Thomas H. Isaacs (DOE)

8:30
Scientific Progress at Yucca Mountain, Carl P. Gertz (DOE, Las Vegas)

9:00
The Importance of Scientific Literacy to OCRWM's Mission, Ginger P. King (DOE)

9:30
Panel Discussion

Innovative Applications in Robotics and Remote Handling, sponsored by the Remote Systems Technology Division. Session organizer: C. E. Johnson (WINCO). Chair: Clifford E. Johnson

South Cotillion Trans., pp. 605-609

8:00
Solids Modeling in Remote Equipment Design, J. M. Seay, R. L. Bogart (PNL)

8:20
An Expert System for Automated Robotic Grasping, Sharon A. Stansfield (SNL)

8:40
Design Concepts for an Analytical Chemistry Laboratory to Support Plutonium Processing, Marvin A. Wade, Herold A. Treibs, Steven D. Hartenstein (WINCO)

9:00
Radiation-Hardened Microwave Communications System, Stephen F. Smith, Richard I. Crutcher, Roy I. Vandermolen (ORNL)

***Assessing the Future: Human Resources and Cost Issues**, sponsored by the Power Division;

cosponsored by the Education and Training Division. Session organizer: Angelo F. Bisesti (Bechtel, Norwalk). Chair: Angelo F. Bisesti

Dover Trans., pp. 399-403

8:00
Managing Diversity: Changing Demographics in the Engineering Workplace, J. C. Judd, J. J. Vella (Bechtel, Norwalk), invited

8:20
The American Nuclear Construction Craftsmen: Will We Be Ready to Build Again? Richard Bravo (PSE&G, Hancock's Bridge), invited

8:40
Will the United States Be a Viable Source of Engineers and Constructors at the Turn of the Century? Donald M. Reynerson (Texas Util)

9:00
Quantity and Quality in Nuclear Engineering Professional Skills Needed by the Nuclear Power Industry, Richard J. Siember (Westinghouse), invited

9:20
Rate-Base Determination Through Real-Time Efficiency Assessment, James H. Eckhardt, Thomas W. Bishop (OKA)

***Startup Experience at BNF and Savannah River Vitrification Plants—I**, sponsored by the Fuel Cycle and Waste Management Division. Session organizer: K. M. Tominey (PNL). All invited. Chair: K. M. Tominey

Rockville Trans., pp. 87-89

8:00
The Design and Performance Demonstration of the Vitrified Product Store, T. J. Houghton (BNFL-UK)

8:15
Technical Aspects of Commissioning a Vitrifi-

cation Production Line, George D. Beveridge (BNFL-UK)

8:30
Liquid-Waste-Handling Technology Employed in the Windscale Vitrification Plant, George D. Beveridge (BNFL-UK)

***Startup Experience at BNF and Savannah River Vitrification Plants—II**, sponsored by the Fuel Cycle and Waste Management Division. Session organizer: K. M. Tominey (PNL). All invited. Chair: K. M. Tominey

Rockville Trans., p. 90

8:00
Speakers:
T. J. Houghton (BNFL-UK)
George Beveridge (BNFL-UK)
Kevin Hall (DOE)
N. J. Daugherty (Westinghouse SRC)
J. A. Gentilucci (Westinghouse SRC)
H. H. Elder (Westinghouse SRC)

Radiation Protection and Shielding—General, sponsored by the Radiation Protection and Shielding Division. Chair: S. Jha (Bechtel Power)

Annapolis Trans., pp. 447-451

8:00
Isotropic Analogs for Radiation Levels Across Off-Core Midplane Penetrations, S. K. Bhatnagar (DOE, Germantown), P. R. Allen (SWEC, Cherry Hill)

8:20
Source Term Calculation for a Small LOCA Sequence in a VVER-1000-Type Reactor, Gert Sdouz (OFZS-Austria)

8:40
Slab Transmission and Reflection for Point Source and Point Detector, Charles Eisenhauer (NIST)

*Special session

Continued

Wednesday morning—cont'd

9:00

Shielding as a Diffuser of Radiation. S. K. Bhatnagar (DOE, Germantown)

***Ten Years of Advances in LMR Materials—II**, sponsored by the Materials Science and Technology Division. Session organizer: Jerry L. Ethridge (Westinghouse Hanford). Chair: Jerry L. Ethridge

Baltimore Trans., pp. 264-268

8:00

Fuel Pin Mechanical Behavior: Ten Years of LMR Experience. A. Boltax (Westinghouse AES, Madison), invited

8:25

A Decade of RBCB Testing of LMR Oxide Fuel in EBR-II. J. D. B. Lambert, J. H. Bottcher, K. C. Gross, R. V. Strain, J. I. Sackett (ANL), R. P. Colburn (Westinghouse Hanford), S. Ukai, S. Nomura, T. Odo, S. Shikakura, M. Katsuragawa (PNC, Oarai-Japan), invited

8:50

Liquid-Metal Reactor Absorber Technology. A. L. Pitner (Westinghouse Hanford)

9:15

Performance Analysis of a Mixed-Nitride Fuel System for an Advanced Liquid-Metal Reactor. W. F. Lyon, R. D. Leggett, R. B. Baker (Westinghouse Hanford)

***Criticality Safety Support of LMR Technology**, sponsored by the Nuclear Criticality Safety Division. Session organizer: Richard A. Libby (PNL). Chair: Chuck Rogers (Westinghouse Hanford)

Arlington Trans., pp. 330-335

8:00

Criticality Experiments with Plutonium-Uranium Fuel Mixtures. R. C. Lloyd (PNL), invited

8:30

Criticality Experiments with Fast Flux Test Facility Fuel Pins. S. R. Bierman (PNL), invited

9:00

American National Standard ANSI/ANS-8.12-1987—History and Limits. R. A. Libby, E. D. Clayton (PNL)

***Advances in the Reactor Physics of Automatic Natural Safety Features**, sponsored by the Reactor Physics Division; cosponsored by the Nuclear Reactor Safety Division. Session organizer: Adi Dastur (AECL Sheridan Park-Canada). Chair: Adi Dastur

Richmond

Trans., pp. 538-542

8:00

The Negative Temperature Coefficient as a Natural Safety Feature of SLOWPOKE Reactors. J. W. Hilborn, B. M. Townes (AECL Chalk River-Canada), invited

8:25

Quasi-Static Reactivity Balance Interpretations of Inherent Safety Response in Fast and Thermal Reactors. David C. Wade (ANL)

8:50

Irradiation Creep and Swelling Effects on Core Radial Expansion Feedback in LMRs. Thomas J. Moran (ANL)

9:15

Core and Fuel Design Considerations for Boiling Water Reactors with Passive Safety Features. L. E. Fennem, R. M. Fawcett (GENE), invited

Enhancing Professionalism in Nuclear Operations, sponsored by the Reactor Operations Division; cosponsored by the Education and Training Division and the Human Factors Division. Chair: Glenn Litzenberger (RG&E, Ginna)

Alexandria

Trans., pp. 479-483

8:00

Beat 'em or Lead 'em: What Is Management's Job? Mark Paradies (System Improvements)

8:25

A Proposal for Enhancing Engineering Expertise on Shift at Nuclear Power Plants: The Engineering SRO. Stewart W. Long (NRC)

8:50

Extending Human Factors Beyond the Control Room. A. C. Macris (Macris Consult), John M. O'Connor (YAEC, Bolton)

9:15

Organizational Culture and Nuclear Safety. R. P. Germann (GPU Nuclear, NJ)

***Recent Developments in Instramental Nuclear Measurements—I**, sponsored by the Isotopes and Radiation Division; cosponsored by the Biology and Medicine Division and the Radiation Protection and Shielding Division. Session organizer: Rolf Zeisler (NIST). All invited. Chair: Robert R. Greenberg (NIST)

Kansas

Trans., pp. 196-199

8:00

Recent Developments in Solid Scintillator Re-

search. P. Schotanus (Engelhard de Meern-Netherlands)

8:25

Characterization and Applicability of Low-Background Germanium Detectors. R. M. Keyser (EG&G ORTEC)

8:50

Improving MDA and Sample Throughput with Super-Large Germanium Gamma-Ray Detectors. S. E. Wagner, R. M. Keyser, T. R. Twomey (EG&G ORTEC)

9:15

High-Count-Rate Gamma-Ray Spectroscopy. G. P. Westphal (Atominstutit-Austria)

***Seismic Qualification—Experience-Based Approach**, sponsored by the Power Division; cosponsored by the Education and Training Division. Session organizers: Eric Blocher (Gilbert Commonwealth), Walter Meyer (Syracuse Univ). Chair: Walter Meyer

Idaho

Trans., pp. 404-408

8:00

Operational Experience of the Paks Nuclear Power Plant. Zoltan Szatmary (HNS-Hungary), invited

8:25

The NRC Research Program on Seismic Component Fragilities. John O'Brien (NRC)

8:50

An Academic Program for Experience-Based Seismic Evaluation. Stephan J. Nix, Walter Meyer, Samuel P. Clemence (Syracuse Univ), invited

9:15

Evolution of the SQUIG Methodology for Seismic Verification of Nuclear Plant Equipment. W. R. Schmidt (MPR Assoc.), R. P. Kassawara (EPRI), Neil P. Smith (CECo, Downers Grove), invited

Neural Networks and Expert Systems in Nuclear Power Plants, sponsored by the Human Factors Division. Chair: Niall R. Hunt (INEL, EG&G Idaho)

Wisconsin

Trans., pp. 129-131

8:00

A Neural Network to Extract Implicit Knowledge from a Nuclear Data Base. Awatef Gacem (Univ of Tennessee), Alianna Maren (UTSI), Robert Uhrig (Univ of Tennessee)

8:30

Nuclear Power Plant Transients Pattern Recognition Using a Neural Network Methodology. M. Ragheb, T. Campos (Univ of Illinois)

9:00

Verification and Validation of Expert Systems for Nuclear Power Applications. Warren K.

*Special session

Wednesday morning—cont'd

Brewer, Paul J. Quattro (ABZ), Gregg E. Joss (RG&E, Ginna)

Environmental Impacts of Cooling Ponds, sponsored by the Environmental Sciences Division. Chair: John B. Gladden (Westinghouse SRC)

Warren *Trans.*, pp. 45-50

8:00

Multidisciplinary Benefits from Biomonitoring Studies of Cooling Reservoirs. James A. Bowers, John B. Gladden (Westinghouse SRC)

8:20

Assessment of Biological Balance in a Developing Reservoir Fish Community. Michael H. Paller (Westinghouse SRC)

8:40

Cultivation of Algae and Nutrient Removal in a Reactor Cooling Pond. Edward W. Wilde (Westinghouse SRC), John R. Benemann (Benemann Consult)

Natural Circulation in Reactor Systems—II, sponsored by the Thermal Hydraulics Division. Session organizer: Jong H. Kim (EPRI). Chair: Jong H. Kim

Holmes *Trans.*, pp. 692-698

8:00

Convective Flow Measurements in a Heated Cavity Using Digital Imaging Velocimetry. Yassin Hassan, Hector Luis Chavez (Texas A&M)

8:25

Thermohydraulic Model Experiments and Calculations on the Transition from Forced to Natural Circulation for Pool-Type Fast Reactors. Helmut Hoffmann, Klaus Marten, Dietrich Weinberg (KfK-FRG), Hikedai Kamide (PNC R&D)-Japan

8:50

Steam Condensation and Liquid Hold-up in Steam Generator U-Tubes During Oscillatory Natural Circulation. G. F. De Santi (CEC-Italy), F. Mayinger (Tech Univ of Munich-FRG)

9:15

Testing and Analysis of Passive Decay Heat Removal in Liquid Metal Systems. Richard C. Soucy, Ravneesh Amar (ETEC)

***Microcomputer Applications in Reactor Physics—I**, sponsored by the Reactor Physics Division; cosponsored by the Mathematics and Computation Division. Session organizer:

Dale Lancaster (Georgia Tech). All invited. Chair: Dale Lancaster

Marshall *Trans.*, pp. 543-546

8:00

Application of Desktop Computers in Nuclear Engineering Education. Harvey W. Graves, Jr. (Univ of Maryland)

8:25

New Versions of VENTURE/PC. A Multi-group, Multidimensional Diffusion-Depletion Code System. A. Shapiro, H. C. Huna (Univ of Cincinnati)

8:50

Microcomputing Technology Impacts on Utility Reload Design Analyses. R. R. St. Clair, L. D. McClain (Duke Power)

Advancements in Radionuclide Thermal Hydraulics, sponsored by the Thermal Hydraulics Division. Session organizer: Mati Merilo (EPRI). Chair: Mati Merilo

Vernon *Trans.*, pp. 699-703

8:00

Transport and Retention of Radio-Iodine on the Secondary Side of a U-Tube Steam Generator During a Tube Rupture Event. S. M. Ghiaasiaan, A. T. Wassel (SAIC, Torrance), S. P. Kalra (EPRI)

8:20

Radionuclide Transport and Retention in Reactor Cooling Systems During Severe Accidents. A. T. Wassel, J. L. Farr, Jr., D. C. Bugby (SAIC, Torrance), M. Merilo (EPRI)

8:40

Fission Product Chemistry and Transport in Reactor Accidents. A. C. Vikis, F. Gansto, W. C. H. Kupferschmidt, N. H. Sagert (AECL Whiteshell-Canada)

9:00

Experiment Poseidon: Elemental Iodine Retention in Water Pools. S. Guntay (Scherrer Inst-Switzerland)

9:20

Scrubbing Theory of a Volatile Fission Product Vapor-Containing Gas Jet in a Water Pool. Michael Epstein (Fauske & Assoc)

10:00 a.m.

***Technical Program Chair's Plenary: Waste Disposal in the United States Today and Programs in Actinide Recovery**. Session organizer: Adolf S. Garcia (ANL-Idaho). Chair: Adolf S. Garcia

South Cotillion

Trans., p. 2

Speakers to be announced

Remote Operations in the Liquid-Metal Reactor Program—Yesterday, Today, and Tomorrow, sponsored by the Remote Systems Technology Division. Session organizer: Peter W. Gibbons (Westinghouse Hanford). Chair: Peter W. Gibbons

Wilmington *Trans.*, pp. 610-616

1:00
Fast Flux Test Facility Interim Examination and Maintenance Cell—Past, Present, and Future, J. R. Vincent (Westinghouse Hanford)

1:20
The Search for Advanced Remote Technology in Fast Reactor Reprocessing, W. D. Burch, J. N. Herndon, J. G. Stradley (ORNL)

1:40
Development of Remote Disassembly Technology for Liquid-Metal Reactor Fuel, E. C. Bradley, J. H. Evans, C. F. Metz III, B. S. Weil (ORNL)

2:00
Remote Replacement of Materials Open-Test Assembly Specimens at the FFTF/TEM Cell, Peter W. Gibbons, Everett B. Ramsey (Westinghouse Hanford)

2:20
Remote Disassembly of the Absorber Open-Test Assembly at the FFTF/TEM Cell, Everett B. Ramsey (Westinghouse Hanford)

2:40
An Improved Out-Cell to In-Cell Rapid Transfer System at the HFEF-South, J. P. Bacca, E. K. Sherman (ANL-Idaho)

3:00
Techniques for Cutting Irradiated Fuel Ducts at the FFTF/TEM Cell, Wayne H. Payzant (Westinghouse Hanford)

Where is the Next Generation of Engineers/Constructors? sponsored by the Power Division; cosponsored by the Education and Training Division. Session organizer: Angelo F. Bisesti (Bechtel, Norwalk). All invited. Chair: Angelo F. Bisesti

Dover *Trans.*, p. 409

1:00
Speakers:
Bertram Wolfe (GE, San Jose)
Richard Slember (Westinghouse NTSD)

Michael W. Golay (MIT)
Theresa Meisenheimer (Univ of Florida)

***Reactor Physics Standards—Need and Status—II**, sponsored by the Reactor Physics Division. Session organizer: Dimitrios Cokinos (BNL). All invited. Chair: Dimitrios Cokinos

Rockville *Trans.*, pp. 533-537

1:00
Reactor Start-up Physics Test Standards for PWRs—An Overview for the '90s, Charles T. Rombough (CTR Tech Svc)

1:30
Status and Future for ANSI/ANS-5.1, Decay Heat Power in Light Water Reactors, R. E. Schenter (Westinghouse Hanford), T. R. England (LANL), J. Katakura (JAERI-Japan)

2:00
Proposed Improvements to ANSI/ANS-5.1, Decay Heat Power in Light Water Reactors, J. K. Dickens (ORNL)

Data and Analysis for Criticality Safety, sponsored by the Nuclear Criticality Safety Division. Chair: R. Doug Odell (LANL)

Rockville *Trans.*, pp. 336-342

2:40
Nuclear Criticality Parameter Study Data Base, Hans Toffer (Westinghouse Hanford), Dennis A. Tollefson (MMES), John S. Pearson (LLNL), Justin L. Clary (Westinghouse Hanford)

3:00
Recent Developments in Criticality Assessment at BNFL Sellafield, C. R. J. Sunman (BNFL-UK)

3:20
Validation of SCALE-4 for LWR Fuel in Transportation and Storage Cask Conditions, Stephen M. Bowman, Cecil V. Parks

*Special session

(ORNL), Sidney R. Bierman (PNL)

3:40
Neutron Leakage Benchmark for Criticality Safety Research, D. M. Gilliam, V. Spiegel, C. M. Eisenhauer, Eiping Quang (NIST), Judith F. Briesmeister (LANL), Jabo Tang (ORNL)

Materials Science and Technology—General—II, sponsored by the Materials Science and Technology Division. Chair: Leo Lawrence (Westinghouse Hanford)

Annapolis *Trans.*, pp. 250-254

1:00
Cobalt in Nuclear-Service Zircaloy, J. Outwater, P. Borys, E. Cabello, M. Driscoll, I. Olmez (MIT)

1:30
Effects of Sensitization on Mechanical Properties of Type 304-L Stainless Steel, L. Vargas (Univ Autonoma Met-Mexico), E. A. Martinez (ININ-Mexico)

2:00
Dynamic Strain-Aging Effect on Fracture Toughness of Vessel Steels, In Sup Kim, Sung Sik Kang (KAIST-Korea)

2:30
Steam Generator Tube Plug Installation Suitability, Robert N. Tsalotico, C. A. Davenport (ABB Impell)

Fuel Cycle—General, sponsored by the Fuel Cycle and Waste Management Division. Chair: Hassan Hassan (B&W)

Baltimore *Trans.*, pp. 91-96

1:00
An Innovative Fuel Design Concept for Improved Light Water Reactor Performance and Safety, James S. Tulenko, Richard F. Wright (Univ of Florida)

1:30
Modeling of Partition-Transmutation-Disposal Systems with the ASPEN PLUS Flow-Sheet Simulator, Lino G. Niccoli, George Jansen, Jr. (Westinghouse Hanford), Ihab H. Farag (Univ of New Hampshire), Chau-Chyun Chen (Aspen Technol)

3:20

Fast Real-Time Gross Gamma Assays in Water and Rock Samples. A. Campbell Ling (San Jose State), invited

***Progress and Trends in Liquid-Metal Reactor Operations**, sponsored by the Reactor Operations Division. Session organizer: Denny Newland (Westinghouse Hanford). All invited. Chair: Denny Newland

Richmond Trans., p. 484

1:00

Speakers:

Denny Newland (Westinghouse Hanford)
Roland Smith (ANL-Idaho)
L. A. Kochetkov (IPPE-USSR)

2:00

Systems Engineering in Waste Management Regulation—A Progress Report. D. T. Romine (CNWRA, San Antonio), invited

2:30

Reliability Assessment of a Continuous Nuclear Fuel Dissolution System. S. C. Nelson, M. J. Haire, B. E. Lewis (ORNL), T. Koyama (PNC-Japan)

3:00

An Updated Computer Code for Radionuclide Chain Migration: UCB-NE-10.4. W. B. Light, P. L. Chambers, W. W.-L. Lee, T. H. Pigford (Univ of California, Berkeley)

***Recent Developments in Instrumental Nuclear Measurements—II**, sponsored by the Isotopes and Radiation Division; cosponsored by the Biology and Medicine Division and the Radiation Protection and Shielding Division. Session organizer: Rolf Zeisler (NIST). Chair: J. R. Tanner (FDA)

Arlington Trans., pp. 200-207

1:00

SAMPO 90: New Capabilities in a Gamma Spectroscopy Program. Markku J. Koskela (Canberra NPG), P. A. Aarnio, M. Nikkinen, J. T. Routti (Helsinki UT-Finland)

1:20

Using Library-Directed Analysis for Singlet and Multiplet Peaks. R. Seymour, J. Cox (EG&G Instr), invited

1:40

Surface-Related Problems in Nuclear Reaction Analysis with Ion Beams. G. Blondiaux, G. Ducouret, B. Hakim, C. Perrin, J. L. Debrun (CNRS CERI-France), invited

2:00

Conversion Electron Depth Profiling. David D. Clark (Cornell Univ), invited

2:20

Quantitative Analysis with Autoradiography. Susan F. Scone (NIST), invited

2:40

Scintillating Fiber-Optic Radiation Detectors. Don W. Miller, Hua Shao (Ohio State)

3:00

Recent Developments in Nuclear Track Techniques. Kevin D. Crowley (Miami Univ), invited

Station Blackouts: A Discussion of Industry/NRC Initiatives, sponsored by the Reactor Operations Division. Chair: Vittorio Pareto (Devonrue)

Alexandria Trans., pp. 485-488

1:00

NUMARC/NRC Interactions Related to the Station Blackout Rule. Faust Rosa, Paul Gill (NRC)

1:20

Utility Perspective on Station Blackout Rule Implementation with NUMARC 87-00. John Maracek (Duquesne Light)

1:40

Station Blackout Rule Implementation at Dresden and Quad Cities. Zygmunt J. Boxer (CEC or Downers Grove)

2:00

Implementation of the Station Blackout Rule at Virginia Power. James Z. LaPlante (Virginia Power, Glen Allen)

2:20

Panel Discussion

***Human Behavior in Severe Accidents**, sponsored by the Nuclear Reactor Safety Division; cosponsored by the Education and Training Division and the Human Factors Division. Session organizer: Gordon C. Bischoff (C-E). Chair: Gordon C. Bischoff

Kansas Trans., pp. 370-373

1:00

Regulatory Approach to Enhanced Human Performance During Accidents. R. L. Palla, Jr. (NRC), invited

1:30

Stress, Performance, and Control Room Operations. Craig W. Fontaine (ABB C-E), invited

2:00

Use of Structured Personality Survey Techniques to Indicate Operator Response to Stressful Situations. Mitchell A. Waller (Delta Prime)

Reliability and Risk Assessment, sponsored by the Nuclear Reactor Safety Division; cosponsored by the Environmental Sciences Division and the Human Factors Division. Chair: Ali Mosleh (Univ of Maryland)

Kansas Trans., pp. 374-378

2:30

N Reactor Individual Risk Comparison to Quantitative Nuclear Safety Goals. Oliver S. Wang, Thomas E. Rainey, Michael D. Zentner (Westinghouse Hanford)

3:00

A Probabilistic Risk Assessment of an AGN-201M Reactor. Gregg P. Brumburgh, A. Sharif Heger, Robert D. Busch (Univ of New Mexico)

3:30

A New Approach for Predicting Reliability of Mechanical Components. Yoshihiko Uhara, Fumihiko Namekawa, Katsumi Yamada, Noriaki Hirata (Toshiba NEL-Japan)

***Expert System Issues Associated with Verification and Validation**, sponsored by the Power Division; cosponsored by the Human Factors Division. Session organizers: Walter Meyer (Syracuse Univ), Chuck Sathrum (INET). Chair: Walter Meyer

Idaho Trans., pp. 410-415

1:00

Yankee Rowe Simulator Core Model Validation. Mary E. Napolitano (YAEC)

1:20

Expert System Verification and Validation for Nuclear Power Industry Applications. Joseph A. Naser (EPRI), invited

1:40

Command Validation of Secondary EM Pump System in the EBR-II. R. L. Bywater (NRC, Glen Ellyn), B. R. Upadhyaya, R. C. Berkan (Univ of Tennessee), R. A. Kisner (ORNL)

2:00

Expert System Verification and Validation Techniques for the Utility Industry. Mark Stunder (GEOMET), invited

2:20

Expert Systems and Nuclear Safety. Leo Beltracchi (NRC), invited

***Human Performance and the Man/Machine Interface**, sponsored by the Human Factors Division. Chair: Paul Amico (SAIC, DC)

Wisconsin Trans., pp. 132-137

1:00

Institutional Support for Nuclear Plant Operators. K. R. Weaver (Shaftesbury), D. G. Mosey (Ontario Hydro-Canada), invited

1:30

Improving Human Performance Through Focused Supervisory/Management Training. Forrest E. Tate (RHR Int), Ross P. Barkhurst (Entergy)

2:00

An Introduction to the Safety Performance

Wednesday afternoon—cont'd

Measurement System. Sharon L. Commander (INEL, EG&G Idaho)

2:30

Research on Human Factors: General Operator Models. On-Site and Simulator Studies. Michel A. Liory (EdF Clamart-France)

3:00

Human Factors in Reliability and Risk Assessments of Nuclear Power Plants. Thomas G. Ryan (NRC)

3:30

Computer Simulation in Human Reliability Analysis. Paul M. Lewis (NRC), invited

Dose Assessment Under Complex Meteorological Conditions, sponsored by the Environmental Sciences Division; cosponsored by the Radiation Protection and Shielding Division. Chair: W. A. Lyons (R*SCAN)

Warren *Trans.*, pp. 51-56

1:00

Modeling Transport and Diffusion in Complex Sea Breeze Wind Fields. Walter A. Lyons, Dennis A. Moon (R*SCAN), Roger A. Pielke (ASTeR)

1:20

Atmospheric Modeling for Dose Reconstruction at Hanford. J. V. Ramsdell, K. W. Burk (PNL)

1:40

CEC/DOE Workshop on Uncertainty Analysis. C. E. Elderkin (PNL), G. N. Kelly (CEC-Belgium)

2:00

Results Tutorial: The Nordic Cooperation Performance on Accident Consequence Assessment. Ulf Tveten (Inst Energy Technol-Norway)

Thermal-Hydraulic Aspects of Passive Safety and New-Generation Reactors—II, sponsored by the Thermal Hydraulics Division; cosponsored by the Nuclear Reactor Safety Division. Session organizers: S. Michael Modro, Victor Ransom (INEL, EG&G Idaho). Chair: Victor Ransom

Holmes *Trans.*, pp. 673-681

1:00

Thermal-Hydraulic Impact of Failure of Highly Irradiated Fuel Pins on LMR Passive Safety. Floyd E. Dunn, J. P. Herzog (ANL)

1:25

PIUS Boron Transport Phenomena—A Comparison of Experiments with Simulations. Ulf

Bredolt (ABB Atom AB-Sweden)

1:50

Comparing Dynamic Responses of Recirculating and Once-Through Steam Generators for Next-Generation LWRs, Sadashiva S. Godbole (B&W)

2:15

Development of a Detailed Core Flow Analysis Code for Prismatic Fuel Reactors, R. G. Berry (INEL, EG&G Idaho)

2:4

Gamma-ray Removal in HTGRs by Natural Circulation, J. Tzoref, D. Saphier (Soreq NR, Israel)

3:05

Bounding Severe Water Ingress Analysis Modular High-Temperature Gas-Cooled Reactors, Peter G. Kronger (BNL)

3:30

Bounding Analysis of the Containment of High-Pressure Melt Ejection in Advanced Light Water Reactors, M. H. Fontana (TENERA, Knoxville), S. L. Additon (TENERA, Bethesda), J. C. Carter (TENERA, Knoxville)

***Microcomputer Applications in Reactor Physics—II**, sponsored by the Reactor Physics Division; cosponsored by the Mathematics and Computation Division. Session organizer: Dale Lancaster (Georgia Tech). Chair: Dale Lancaster

Marshall

Trans., pp. 547-554

1:00

MICSIM: A PC-Based Micro Core Simulator for LWRs, Yong S. Kim (NUS), David Vasak (NIS Ing-FRG)

1:25

BWFC's Experience with Microcomputer Applications, C. W. Mays, R. C. Deveney, M. E. Mays, N. M. Hassan (B&W), invited

1:50

Benchmarking of SIMULATE-3 on Engineering Workstations, C. F. Karlson, M. L. Reed, J. R. Webb, J. D. Elzea (APS), invited

2:15

RESCUE: A PC-Based Interactive Reload Design Tool, John R. White, Philip M. Delmolino (Univ of Lowell)

2:40

Fuel Management Studies with the PC2D Personal Computer Program, R. L. Harris (Wisconsin Electric), B. H. Alsop (Westinghouse NFD), invited

3:05

Start-up Predictions Using PC1D, A Personal-Computer-Based Neutronics Code, Peter G. Sarafian (PG&E, Avila), Brian H. Alsop (Westinghouse NFD), invited

4:30 p.m.

The Aftermath of Chernobyl: An International Project on the Radiological Consequences in the USSR of the Chernobyl Accident. Chair: Morris Rosen (IAEA)

Thursday, November 15
8:30 a.m.

Nonlinear Applications of Robotics and Remote Handling, sponsored by the Remote Systems Technology Division. Session organizer: W. M. Thompson (Nucl Svc Assoc). Chair: W. M. Thompson

Wilmington Trans., pp. 617-621

8:30
Manipulation Hardware for Microgravity Research. J. N. Herndon, R. L. Glassell, P. L. Butler, D. M. Williams (ORNL), D. A. Rohn, J. W. Miller (NASA LRC)

8:50
Rocket Fuel Mix Bowl Cleaner. Dennis Densmore (CIMCORP)

9:10
Flight Telerobotic Servicer Technology. Wendell H. Chun, Kayland Z. Bradford (MMSSC)

9:30
High-Performance, High-Dexterity, Force-Reflective Telerobotics. S. C. Jacobsen, E. K. Iversen, C. C. Davis, D. K. Backman, F. M. Smith (Univ of Utah)

9:50
Development of an Autonomous Excavator System for Remote Applications. Carl D. Crane III (CIMR), Allen Nease (USAFESC), Joseph Duffy (CIMR)

***Radiation Shielding Calculations on Personal Computers**, sponsored by the Radiation Protection and Shielding Division. Session organizer: Bernadette L. Kirk (ORNL). Chair: Bernadette L. Kirk

Dover Trans., pp. 452-462

8:30
Radiation Shielding and Transport Codes and Data Libraries for Personal Computers Available from the Radiation Shielding Information Center. Bernadette L. Kirk (ORNL)

8:50
Los Alamos Radiation Transport Code System on Desktop Computing Platforms. J. F. Briesmeister, F. W. Brinkley, B. A. Clark, J. T. West (LANL), invited

9:15
Multidimensional Radiation Transport Analysis on PCs and Workstations—A Trend for the '90s. David W. Nigg, Michael G. Jacob, Jerry L. Judd, Floyd J. Wheeler (INEL, EG&G Idaho), Mike Gartner (Halliburton), invited

9:40
ASFTT-VARI: A Practical Gamma-Ray Transport Code for MS-DOS Computers. D. K. Trubey (ORNL), K. V. Subbiah, D. V. Gopinath (IGCAR-India), invited

10:05
PC Version of QADMOD-G with Geometric Progression Buildup Factors. J. K. Warkentin (Texas Util), invited

10:30
Modeling a Roll-Off Container Transporta-

tion Worker Dose Scenario for BRC Radiowaste. Nolan E. Hertel, Wallace G. Lovely, James R. Jupena (Univ of Texas, Austin), Christine G. Pollard (Texas LLW DA), invited

11:05
Dose Rates for Several Human Organs Using QAD. Katherine Phillips, Nicholas Tsoulfanidis (Univ of Missouri-Rolla)

***Maintenance of Meter-Operated Valves and Check-Valve Testing to Improve Plant Operability**, sponsored by the Reactor Operations Division; cosponsored by the Power Division. Session organizer: Bruce Hinkley (Quadrex). All invited. Chair: Bruce Hinkley

Rockville Trans., pp. 489
8:30

Speakers:
Stan Hale (Henze-Movats)
Brian Sullivan (Boston Edison, Braintree)
Charles Grabski (A. W. Chesterton)
Mark Grantham (CP&L, Southport)

***Special Session: Stimulating a Generation with Science Appreciation**, sponsored by the Public Information Committee; cosponsored by the Education and Training Division and the Power Division. Session organizer: Eugene Cramer (SCE, Irvine). All invited.

Baltimore Trans., p. 4
8:30

Invited speakers will discuss the following subjects:

1. Defining the Problem
2. What Is a Scientifically Literate Person?
3. Math Counts—An Intellectual Sport
4. A Farm System for Radiation Safety Specialists
5. Working with Science Teachers
6. Chemistry Matters—Making Science Interesting
7. Regional Science Centers
8. Do Science and Society Collide? Cooperate?
9. What Needs to be Done?

***Radioisotope Power Systems for Space and Terrestrial Applications**, sponsored by the Isotopes and Radiation Division. Session organizer: James Turi (DOE). All invited. Chair: James Turi

Arlington Trans., pp. 208-219

*Special session

8:30
The Radioisotope Power Systems Program—An Overview. Robert T. Carpenter (Fairchild Space), James A. Turi (DOE)

8:55
Low-Power RTGs for Terrestrial Applications. Wayne M. Brittain, John F. Vogt (Teledyne ES)

9:20
Galileo Light-Weight Radioisotope Heater Unit Design and Safety Analysis. Ernest W. Johnson (EG&G MAT), Roy W. Zocher (LANL)

9:45
Performance of GPHS-RTGs on the Galileo Mission. R. J. Hemler, R. D. Cockfield (GE, Philadelphia)

10:10
GPHS-RTG Launch Accident Analysis for Galileo and Ulysses. C. T. Bradshaw (GE, Philadelphia)

10:35
Radiological Consequence and Risk Analyses for the Galileo and Ulysses Missions. Bart W. Bartram, Richard W. Englehart, F. R. Vaughan (NUS)

11:00
Dynamic Isotope Power Systems—Versatility for Space Exploration. Richard A. Johnson (Rockwell Int, Canoga Park)

Transmutation as a Waste Management Tool, sponsored by the Fuel Cycle and Waste Management Division. Chair: T. Pigford (Univ of California)

Richmond Trans., pp. 97-106

8:30
Reprocessing Incentives for Waste Disposal. Thomas H. Pigford (Univ of California, Berkeley)

8:50
Potential Roles of LMR Technology for Waste Transmutation. J. A. Rawlins (Westinghouse Hanford), S. Baker (ICF Inc., Richmond), G. Van Tuyle (BNL)

9:10
Proposed Transmutation of Long-Lived Radioactive Wastes to Produce Electric Power. Gregory J. Van Tuyle, Michael Todorow, Hiroshi Takahashi, Gregory C. Slovik, Arnold L. Aronson (BNL)

9:30
Partition-Transmutation as a Nuclear Waste Management Tool. Brad J. Knutson, George Jansen, Jr., Lino G. Niccoli, T. W. Woods (Westinghouse Hanford)

9:50
Development of Irradiation Targets to Transmute ¹²⁹I. H. R. Brager, L. D. Blackburn, D. W. Wootan (Westinghouse Hanford)

10:10
An Accelerator Concept for Waste Transmu-

Thursday morning—cont'd

Division. D. W. Wootan, F. M. Mann, J. A. Rawlins (Westinghouse Hanford)

10:30

Fission of Actinides in a Fast Reactor. Jor-Shan Choi (LLNL), Thomas H. Pigford (Univ of California, Berkeley)

Fundamentals of Two-Phase Flows, sponsored by the Thermal Hydraulics Division. Session organizers: M. Z. Podowski (RPI), F.B. Best (Texas A&M). Chair: M. Z. Podowski

Alexandria Trans., pp. 704-715

8:30

The Effect of Air on Steam Condensation Under Turbulent Natural Convection. A. A. Debbi, M. W. Golay, M. S. Kazimi (MIT)

8:50

Scaling of Two-Phase Flow Regimes in a Rod Bundle with Freon. Paul D. Symolon (KAPL)

9:10

Multidimensional Analysis of Condensation in Stratified Flow. N. Kurul, Michael Z. Podowski (RPI)

9:30

A Phenomenological Model of Subcooled Flow Boiling in the Detached Bubble Region. J. Y. Yang (Univ of New Mexico), Joel Weisman (Univ of Cincinnati)

9:50

Transient Behavior of Natural Circulation for Boiling Two-Phase Flow—Experimental Results. Masanori Aritomi, Tohru Nakahasi (Tokyo Inst Technol-Japan), Masumi Wataru (CRIEPI-Japan), Jing Hsien Chiang (Tokyo Inst Technol-Japan), Michitsugu Mori (TEPCO-Japan)

10:10

Multiphase Concentration Field Measured by Compton Scattering of Internal Gamma Emitters Using Stationary Instrumentation. Ned N. Kondic (NRC)

10:30

Interfacial Characteristic Measurements in a Horizontal Bubbly Two-Phase Flow. Z. Wang, G. Kocamustafaogullari (Univ of Wisconsin, Milwaukee)

10:50

On the Stability of Stratified Flow and Its Transition to Other Flow Regimes. Leif N. Persen (Univ of Texas, Austin)

Division. Chair: John Purcell (SWEC, Denver)

Kansas

Trans., pp. 490-496

8:30

A Methodology for Compiling the Current Licensing Basis. Patrick A. Ward, Jack P. Levin (Grove Eng)

8:55

Safety Classification of Structures, Systems, Components, Parts, and Consumables. Walter H. D'Ardenne (GENE)

9:20

Implementing a Plantwide User-Friendly Design-Basis Documentation Program. Robert N. Falotico, J. Hurley (ABB Impell), E. Brown (ABB C-E)

9:45

An Automated Approach to Configuration Baseline Documentation. Gary D. Blake (PSE&G, Hancock's Bridge), Masrur A. Khan (Khan Consult)

Component Analysis to Improve System Performance, sponsored by the Power Division. Chair: Terry Herrman (Fitzpatrick)

Idaho

Trans., pp. 416-422

8:30

Improvement in Plant Performance with an Increase in Reactor Steam Dome Pressure. Jeannie M. Rinckel (Cleveland Electric), Harold A. Stiles (Enercon, Raleigh)

8:50

Atmospheric Dump Valve Engineering Analysis. Ben Mendoza, Paul McNemar (APS)

9:10

Duke Power Company's Control Rod Wear Program. D. C. Culp (Duke Power), M. S. Kitlan, Jr. (Duke Power, McGuire)

9:30

Development of the Feedwater Venturi Fouling Coefficient. T. Preston Gillespie, Jr. (Duke Power, Seneca)

9:50

Evaluating the Transient Performance of Emergency Diesel Generator Units by Computer Modeling. R. Bucci, I. Hassan, R. Weronick (Ebasco), W. Busch (FP&L, Juno Beach)

Achieving Effective Configuration Management, sponsored by the Reactor Operations

The Role of Research Reactors in Analytical Chemistry, sponsored by the Isotopes and Radiation Division; cosponsored by the

Biology and Medicine Division. Session organizer: Rolf Zeisler (NIST). All invited. Chair: David D. Clark (Cornell Univ)

Wisconsin *Trans.*, pp. 220-225

8:30 Analytical Opportunities with Short-Lived Nuclides. F. Grass (Atominstutut-Austria)

9:00 Cyclic and Pseudocyclic Neutron Activation Analysis for Trace Elements. A. Chatt, J. Holzbecher (Dalhousie Univ-Canada)

9:30 A Look at the ASTM Reactor Intercomparison. Donald A. Becker (NIST)

10:00 A Search for Metalloproteins in Human Parotid Saliva Using Neutron Activation Analysis. Ilhan Olmez, Jacquelyn Yanch, Michael T. Galvin (MIT), Robert I. Henkin (TSC)

10:30 Neutron Autoradiography of Paintings. Yu-Tarnng Cheng, Jacqueline S. Olin (Smithsonian Inst)

11:00 Application of Prompt Gamma-Ray Activation Analysis to the Characterization of Archeological and Art Historical Materials. Craig A. Stone, Susan F. Stone (NIST), M. J. Blackman, J. S. Olin, E. Myers (Smithsonian Inst), D. D. Clark (Cornell Univ)

Reactor Safety—General, sponsored by the Nuclear Reactor Safety Division. Chair: Donald Paddleford (Westinghouse SRC)

Warren *Trans.*, pp. 379-391

8:30 Practical Application of Passive Safety Features for the Advanced Neutron Source Cooling System. Boyd S. Maxon (ORNL), Ross Miller (ANSTO-Australia), George R. McNutt (ORNL)

8:50 Defense-in-Depth Design Approach to the Eagle-2000 HWR. R. D. Lofffield, R. A. Doncals, J. E. Schmidt, F. M. Bordelon (Westinghouse AES, Madison)

9:15 Nuclear Heatup: A Case for Low-Temperature Critical Operation. C. L. Ritchey (BNS)

9:30 Simulation of a 30-Tube Once-Through Steam

Generator with RELAP5/MOD3 and RELAP5/MOD2 Computer Codes. Y. A. Hassan, Parvez Salim (Texas A&M)

9:50 Development of a Smart Multilead Ther-

mocouple System. Majed N. Natour (B&E Marcia Katz, Thomas W. Kerlin (Univ Tennessee)

10:10 Expert Systems with Fuzzy Logic for Int

Thursday morning—cont'd

gent Diagnosis and Control of Nuclear Power Plants, M. I. Abdelhai, B. R. Upadhyaya (Univ of Tennessee)

10:30

A Calculation Technique to Improve Continuous Monitoring of Containment Integrity, J. E. Dick (AECL Sheridan Park-Canada)

10:50

Hydrogen and Oxygen Production by Radiolysis of Iodine Solution, Hisato Tagawa, Eishi Ibe, Hidetoshi Karasawa (Hitachi ERL-Japan)

11:10

Diagnosis of Nonlinear BWR Oscillations Using TRAC/BFI, Jeffrey Borkowski, Gordon E. Robinson, Anthony J. Baratta (Penn State)

Reprocessing and Waste Management—General—1, sponsored by the Fuel Cycle and Waste Management Division. Chair: Dave Snedeker (Consult)

Hoimes *Trans.*, pp. 107-114

8:30

Treatment Processes for Disposal of Low-Level Liquid Waste, D. O. Campbell, D. D. Lee, T. A. Dillow (ORNL)

9:00

Encapsulation of Solid Reprocessing Waste, P. Bariow (BNFL, Risley-UK)

9:30

ANSI/ANS-16.1-1986 Standard Applied to Solidified Radioactive Wastes—Leaching Characteristics Intercomparisons, Oswald U. Anders (MMI)

10:00

Super-High-Temperature Treatment of High-Level Liquid Wastes, Misato Hone (PNC-Japan)

10:30

New Casks to Meet New Demands for Spent-Fuel Transportation, R. Gowing (BNFL, Risley-UK), D. Bibby (Nucl Transport-UK)

11:00

Versatility and Innovations for a New Mission at the Hanford Site, S. L. Friar (Westinghouse Hanford)

Nuclear Reactor Design, Validation, and Operating Experience, sponsored by the Reactor Physics Division; cosponsored by the Power Division. Chair: Mickey R. Killgore (Texas Util, Dallas)

Marshall *Trans.*, pp. 555-565

8:30

ZrB₂: The Optimum Integral Fuel Burnable Absorber for PWRs, Jeffrey R. Secker, Roger D. Erwin (Westinghouse)

8:55

The LG-Bank Control Concept: An Improved Method for PWR Load-Following Operation, Won Seok Park (KAERI-Korea), J. M. Christenson (Univ of Cincinnati)

9:20

Control Rod Repositioning Considerations in Core Design Analysis, Bobby C. Armstrong (SCS), Robert J. Buechel (Westinghouse NFD)

9:45

Thermal Reactor Benchmark Integral Results for JEF-1, ENDF/B-V, and ENDF/B-VI Nuclear Data, B. K. Kamboj (Georgia Tech), J. M. Paratte, J. M. Kalfelz (Scherrer Inst-Switzerland), S. I. Abdel-Khalik (Georgia Tech)

10:10

Axial Effects of Xenon-Samarium Poisoning

in the Advanced Test Reactor, David J. Auslander, A. Craig Smith, Richard T. McCracken (INEL, EG&G Idaho)

10:35

Recalculation of Reactor Physics Parameters for the High-Flux Isotope Reactor, R. T. Primm III (ORNL)

11:00

On-Line Thermal Power Estimation for Control and Protection of the Advanced Neutron Source Reactor, M. Ibn-Khayat (Univ of Tennessee), J. March-Leuba (ORNL), H. L. Dodds (Univ of Tennessee) □

Thursday, November 15
1:00 p.m.

Robotics and Remote Handling in Waste Management, sponsored by the Remote Systems Technology Division; cosponsored by the Fuel Cycle and Waste Management Division. Session organizer: Betty A. Carteret (Westinghouse Hanford). Chair: Betty A. Carteret

Wilmington Trans., pp. 622-629

1:00

Liquid-Level Measurement in High-Level Nuclear Waste Slurries. G. E. Weeks, F. M. Heckendorn, R. L. Postles (Westinghouse SRC)

1:20

Robotic System for Remote Inspection of Underground Storage Tanks. Bret L. Griebenow, Lori M. Martinson (WINCO)

1:40

Development of a Remote Tank Inspection Robotic System. Barbara P. Knappe, Leona C. Bares (RRI)

2:00

Control and Applications of Cooperating Disparate Robotic Manipulators Relevant to Waste Management. Jae Y. Lew, Wayne J. Book (Georgia Tech)

2:20

Selected In-Tank Property Measurement Methods for Hanford Site Single-Shell Tanks. K. L. Morris, A. F. Shattuck, W. A. Covert (Westinghouse Hanford)

2:40

Remote-Handling Equipment for Removal of Waste from Single-Shell Tanks at the Hanford Site. William W. Jenkins (Westinghouse Hanford)

3:00

New Capability for Remotely Controlled Excavation. William P. Wohlford (Deere), B. Douglas Bode, F. Daniel Griswold (Deere, Dubuque)

***Ten Years of Progress in Liquid-Metal Reactor Physics**, sponsored by the Reactor Physics Division. Session organizer: J. W. Daughtry (Westinghouse Hanford). All invited. Chair: J. W. Daughtry

Dover

Trans., pp. 566-572

1:00

Reactor Physics Results from Fast Flux Test Facility Operation. R. A. Harris, R. A. Bennett, J. W. Daughtry (Westinghouse Hanford)

1:30

Advanced Liquid-Metal-Reactors Develop-

ment at ANL During the 1980s. David C. Wade (ANL)

2:00

LMFBR Physics—Achievements in the Last Decade and Future Trends. M. Salvatores (CEA/CEN Cadarache-France)

2:30

A Review of FBR Physics in Japan. Keisho Shirakata (PNC, Oarai-Japan)

3:00

Progress in the Reactor Physics Design of Space Reactors. Charles L. Cowan, Robert Protsik, Thomas F. Marcille (GE Space, San Jose)

3:30

Development of LMR Physics Technology in the United States. P. B. Hemmig (DOE)

Innovations in Education and Training, sponsored by the Education and Training Division. Chair: Bill Vernetson (Univ of Florida)

Annapolis

Trans., pp. 19-29

1:00

A Comparison of Trajectory Control Techniques in Robotics and Reactor Neutronics. John A. Bernard (MIT)

1:20

Concepts of Reactor Behavior. Robert G. Stater (SURTCO)

1:40

A Successful Model for the Future of Nuclear Education. Frank J. Munno, Thomas A. Janke (Univ of Maryland)

2:00

Outreach Experiments for High School Physics Classes. E. Marcia Katz, Thomas W. Kerlin (Univ of Tennessee)

2:20

Edison State College Assists Nuclear Utility Employees Earn BS Degrees. Susan O. Friedman (Edison State), Paul A. Leonardi (PSE&G NTC), Iris M. Saltiel (Edison State)

2:40

University Papers in American Nuclear Society Transactions with Enrollment and De-

*Special session

gress-IV. Dick Duffey (Univ of Maryland), Peter F. Wiggins (U.S. Naval Acad)

3:00

Educational Training Using the Compact Simulator at Japan Atomic Power Company, Susumu Kawashima (JAPC, Ibaraki-Japan), Goran Johansson (Studsvik-Sweden)

Reprocessing and Waste Management—General-II, sponsored by the Fuel Cycle and Waste Management Division. Chair: Bob Einziger (PNL)

Richmond *Trans.*, pp. 115-120

1:00

Compositing Strategy for Radiometrically Certifying Nonradioactive Hazardous Waste for Transport, Willard G. Winn (Westinghouse SRC)

1:30

Penetration Device for Retrieval of Unvented TRU Waste Drums, Oland Dale Thompson, Stanley T. Kosiewicz (LANL), Ernest D. Marine (NFT)

2:00

Development of a Measuring System for 200-Litre Drums, Tetsuo Goto, Jiro Sakurai (Toshiba MEL-Japan), Hiroaki Kato (Toshiba IEC-Japan)

2:30

Methodology for Conducting a Performance Assessment of Waste Storage Facilities, Randy Janke, Roy Eckart, Robert Janke, Talaat Ijaz (Univ of Cincinnati)

***Radiological Assessments for Decontamination, Decommissioning, and Disposal**, sponsored by the Radiation Protection and Shielding Division; cosponsored by the Environmental Sciences Division and the Fuel Cycle and Waste Management Division. Session organizer: Leon West (Univ of Arkansas). Chair: Joe Cardito (SWEC)

Alexandria *Trans.*, pp. 463-470

1:00

A Computer Program for Deriving Soil Cleanup Criteria, Charley Yu (ANL), invited

1:20

GENII—The Hanford Environmental Dosimetry Software Package, B. A. Napier, R. A. Peloquin, D. L. Strenge, J. V.

Thursday afternoon — cont'd

Ramsdell (PNL), invited

1:40

Verification for Radiological Decommissioning—Lessons Learned, Phyllis R. Cortes, James D. Berger (ORAU), invited

2:00

Standards Development in the Assessment of Radiological Contamination of Soil, Steve Adams (US Ecology)

2:20

An Alternative Atmospheric Diffusion Model for Control Room Habitability Assessments, J. V. Ramsdell, Jr. (PNL), invited

2:40

Biotic Pathways for a Texas Low-Level Radioactive Waste Disposal Facility, Christine G. Pollard (Texas LLW DA), Randall J. Charbonneau, Nolan E. Hertel, Matthew Becker (Univ of Texas, Austin)

3:00

Atmospheric Dispersion Doses at a Texas Low-Level Radioactive Waste Disposal Facility, Bessel Nebeker, Nolan E. Hertel, Randall J. Charbonneau (Univ of Texas, Austin), Christine G. Pollard (Texas LLW DA)

*Utility Waste Management Benchmarks, sponsored by the Fuel Cycle and Waste Management Division. Session organizer: A. Lowell Snow (Roy F. Weston, DC). Chair: A. Lowell Snow

Kansas

Trans., p. 121

1:00

Speakers to be announced

*System Analysis to Improve Plant Performance, sponsored by the Power Division. Session organizer: Harold Stiles (Enercon). Chair: Dwight Mims (APL, ANO)

Idaho

Trans., pp. 423-429

1:00

Balance-of-Plant System Analysis for Power Upgrade of Susquehanna, John A. Rantos (PP&L), David A. Lochbaum (Enercon, Allentown)

1:20

Improved Instrument Setpoints for Extended Surveillance Intervals, Richard M. Bockhorst (SCE, San Onofre), Edward L. Quinn (NDM), W. Joseph Brodbeck (ABB C-E)

1:40

Replenishment of System Spares for Improved Economic Performance, James L. McVay (ABB Impell, Lincolnshire), George Gray (ABB Impell)

2:00

Dedicated Training System Application to Support a Digital System Upgrade, John Reinholdt (PG&E, Avila), John Hefler (Bechtel/PG&E), William Catullo, Vaughn Thomas (Westinghouse)

2:20

System Unavailability Indicators with Extensions to Dynamic Probabilistic Risk Analysis, W. E. Vesely (SAIC, Dublin), M. A. Azarm, J. L. Bocco (BNL), invited

*Nuclear-Particle-Coupled Upsets in Microelectronic Digital Circuits, sponsored by the Isotopes and Radiation Division; cosponsored by the Radiation Protection and Shielding Division. Session organizer: Michael C. Stauber (Grumman). All invited. Chair: Michael C. Stauber

Wisconsin

Trans., pp. 226-236

1:00

Modification of Electron and Positron Sources due to the Reflection of Particles from Back-

ing Material, M. J. Berger (NIST), Radiation Science and Technology Award

1:20

Single-Event Effects—An Overview, Sherris E. Karas (Vanderbilt Univ)

1:40

The Space Radiation Environment, H. Adams, Jr. (Hulburt NRL)

2:00

Estimating Rates of Single-Event Upsets, John A. Zoutendyk (JPL)

2:20

SEU Measurements at the BNL Test Facility, E. G. Stassinopoulos, O. Van Gunten (NASA, Greenbelt)

2:40

Testing Electronics for Single-Event Upset with ^{252}Cf Fission Fragments, R. C. Block, A. Costantine, J. W. Howard, M. Becker (RPI), L. S. (Ted) Smith, G. A. Soli (JPL), M. C. Stauber (Grumman)

3:00

Neutron-Induced Single-Event Upsets, John R. Letaw (Severt), Eugene Normand (Boeing)

3:20

Single-Event Upset Hardening Techniques, H. T. Weaver, W. T. Corbett (SNL)

Computational Modeling, sponsored by the Mathematics and Computation Division, Chair: Henry Makowitz (INEL)

Warren *Trans.*, pp. 298-304

1:00

A Nine-Point ADI Model Problem for Solution of the Diffusion Equation, Tanju Sofu, Eugene L. Wachspress, H. Lee Drdds (Univ of Tennessee)

1:20

Criticality Calculations in Spherical Geometry by a New Set of Quadratures, S. Nielsen, E. J. Allen, K. Ganguly, H. D. Victory, Jr.

1:40

Parallel Performance Models for the Nodal Transport Method on the Hypercube, Youary Y. Azmy (ORNL)

2:00

The Pulse Release Mode for Calculation of Radionuclide Chain Migration, Michael J. Moen, George Jansen, Jr. (Westinghouse Hanford)

2:20

New Vectorized Algorithms for the Spherical S_n Method, Ronald Mattis, Aaireza Haghghat (Penn State)

Numerical Techniques in Reactor System Thermal Hydraulics, sponsored by the Thermal Hydraulics Division; cosponsored by the Mathematics and Computation Division. Session organizer: Tom Larson (INEL, EG&G Idaho). Chair: Tom Larson

Holmes *Trans.*, pp. 716-722

1:00

Modeling Turbulent Diffusive Effects in PWR Cores with THYC, E. Briere (EdF Clamart-

France), J. Olive (EdF Chatou-France), G. Nicolas (EdF Clamart-France)

1:25

Analysis of the Turbine Trip Test with Plant Analyzer. Shih-Jen Wang, C. S. Chien (INER-Taiwan), J. Y. Jang (Taipower-Taiwan)

1:50

A Vectorized Heat Transfer Model for Solid Reactor Cores. William J. Rider, Michael W. Cappiello, Dennis R. Liles (LANL)

2:15

Analysis of Interfacial and Wall Friction Factors of Countercurrent Flow in Vertical Pipes. Yutaka Abe, Hajime Akimoto, Yoshio Murao (JAERI-Japan)

2:40

Thermal-Hydraulic Effects of Clad Swelling and Rupture During Reflood. C. K. Nithianandan, J. R. Biller (B&W)

3:05

REFLOD3B: A Computer Code Simulating PWR System Behavior During Reflood. C. K. Nithianandan, J. R. Biller (B&W)

Reactor Physics—General, sponsored by the Reactor Physics Division. Chair: Richard B. Rothrock (ORNL)

Marshall

Trans., pp. 573-584

1:00

Computation of Multipole Parameters Using Preliminary ENDF/B-VI Data. Luiz C. Leal, Richard N. Hwang, Charles G. Stenberg (ANL)

1:20

Calculation of Slowing Down with Probability Tables. Oum Keltoum Bouheial (ENIM-Morocco), Pierre Ribon (CEA/CEN Saclay-France)

1:40

Measurements of Fuel Pin/Water Hole Worths and Power Peaking, Void Coefficients, and Temperature Coefficients for 4.81 wt% Enriched UO₂ Fuel Rods. D. R. Harris, R. R. Rohr, P. L. Angelo, N. T. Patrou, K. W. Buckwheat, D. K. Hayes (RPI)

2:00

Measured and Calculated Isotopes for a Gadolinia Lead Test Assembly. Craig M. Hove (B&W)

2:20

Gaseous Core Reactor Concept for Both Low- and Burst-Power Applications. Mathew M. Panicker, Edward T. Dugan (Univ of Florida/INSPI)

2:40

Implementation of Variance Reduction Methods for Efficient Monte Carlo Criticality Calculations of Gaseous Core Reactors. Mathew M. Panicker, Edward T. Dugan (Univ of Florida/INSPI)

mixed waste workshop

The Mixed Low-Level Radioactive Waste Workshop, sponsored by the ANS Fuel Cycle and Waste Management Division, and cosponsored by the Biology and Medicine Division, is being held Thursday and Friday, November 15-16, at the Sheraton Washington Hotel. The Preliminary Program for this workshop is listed below.

**Thursday, November 15, 1990
8:30 a.m.**

Welcome. A. Yazdi (Bechtel National Inc.)

Congressional Views, speaker to be announced

Environmental Protection Agency Views, speaker to be announced

Nuclear Regulatory Commission Views, Robert Bernero (NRC)

Commercial Generators, Jeanne Krieger (du Pont)

Defense/DOE Generators, Jill Lytle (DOE)

11:30 a.m.

Lunch

1:00 p.m.

Commercial Waste, Alan Pasternak (Cal Rad Forum), moderator. Topics discussed will include progress and problems in permitting and licensing mixed waste disposal facilities; hazards of onsite storage; methodologies for reducing mixed waste; biomedical mixed waste; and progress and problems in states' obtaining mixed waste authorization.

Speakers:

William Briner (Duke Univ Med Ctr)
Richard LaShier (EPA)
Dan Berkovitz (Senate Env. and Public Works Committee)
Suzanne Rudzinski (EPA)
Richard Bangart (DOE)
Lynn Fairbent (Numarc)

Defense/DOE Waste, Roger R. Land (Bechtel National Inc.), moderator. Topics will include progress of siting efforts; obstacles in siting mixed waste facilities; status and progress of joint guidance; special federal facilities for mixed-LLW; and placing commercial mixed-LLW in DOE facilities.

Speakers:

Christian Holmes (EPA)
Edward L. Heiminski (Weapons Complex Monitor)
Bruce Clemmons (Bechtel National Inc.)
Stephen Cowen (DOE)
Speaker from the national labs
Speaker from Naval Reactors Division

**Friday, November 16
8:30 a.m.**

Legislative Session, Roger R. Land (Bechtel National Inc.), moderator. Topics to be discussed include legislative actions; guidance on developing initiatives for pushing legislative action; and an update on the status of land disposal restrictions.

Speakers:

Dan Berkovitz (Senate Env. and Public Works Committee)
Madaline Creedon (Senate Armed Services Committee)
Sue Sheridan (House Energy and Power Committee)
Mary Louise Wagner (Senate Energy and Natural Resources Committee)
Sam Fowler (House Subcommittee on Energy and Environment, Interior Committee)



American Nuclear Society
MIXED LOW-LEVEL RADIOACTIVE WASTE WORKSHOP

Held in Conjunction with the 1990 ANS Winter Meeting
November 15-16, 1990 • Sheraton Washington Hotel • Washington, DC

Sponsored by ANS Fuel Cycle & Waste Management and Biology & Medicine Divisions

FINAL PROGRAM

THURSDAY, NOVEMBER 15, 1990

8:30 am

PLENARY SESSION

South Cotillion Room

Speakers from Congress, the Environmental Protection Agency, the Nuclear Regulatory Commission, commercial generators, and defense/Department of Energy generators will introduce their perspectives on mixed low-level waste management and disposal; present an update on the status of Land Disposal restrictions; and set the stage for the afternoon's panel sessions.

Chairman: *All Yazdi*, Manager of Engineering & Technology, Bechtel National, Inc.

Speakers: *Sam Fowler*, Counsel, U.S. House of Representatives Interior Committees, Subcommittee on Energy and the Environment

Matthew Hale, Jr., Deputy Division Director, Permit and State Programs Division, Office of Solid Waste, U.S. Environmental Protection Agency

Robert Bernero, Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission

Jeanne Krieger, Manager, CMS Project, E.I. DuPont de Nemours & Co., Medical Products Division

Jill Lytle, Associate Director, Office of Waste Operations, Environmental Restoration & Waste Management, U.S. Department of Energy

Alan Pasternak, Technical Director, California Radioactive Materials Management Forum

12 noon

LUNCHEON

1:00 pm

CONCURRENT SESSIONS

SESSION A: COMMERCIAL GENERATORS

Rockville Room

Panelists and session participants will discuss progress and problems in permitting and licensing of mixed waste disposal facilities; hazards of on-site storage; methodologies for reducing mixed waste; biomedical mixed waste; and progress and problems faced by states attempting to obtain mixed waste authorization.

THURSDAY, NOVEMBER 15, 1990, continued

Moderator: *Alan Pasternak*, Technical Director, California Radioactive Materials Management Forum

Panel: *William Walker*, National Institutes of Health Radiation Safety Officer and Chief of Radiation Safety Branch

Richard LaShier, Mixed Waste Coordinator, U.S. Environmental Protection Agency

Dan Berkovitz, Counsel, Senate Committee on the Environment and Public Works

Suzanne Ruc'zinski, Chief of the State Programs Branch, U.S. Environmental Protection Agency

John Austin, Chief, Regulatory Branch, Division of Low-Level Waste Management and Decommissioning, U.S. Nuclear Regulatory Commission

Lynne Fairbent, Senior Project Manager, Nuclear Management and Resources Council

SESSION B: DEFENSE/DOE GENERATORS

Arlington Room

Topics to be discussed include: progress of siting efforts; obstacles in siting mixed waste facilities; status and progress of Joint Guidance; and special federal facilities for mixed low-level waste.

Moderator: *Roger Land*, Senior Engineering Specialist, Bechtel National, Inc.

Panel: *Gordon Davidson*, Acting Director, Office of Federal Facilities Enforcement, U.S. Environmental Protection Agency

Edward Helminski, Publisher, Weapons Complex Monitor

Bruce Clemens, Manager of Environmental Technologies, Bechtel National, Inc.

Stephen Cowan, Deputy Director, Office of Waste Operations, U.S. Department of Energy

Leanne Waldo Smith, Regulatory Compliance Manager, U.S. Department of Energy FTS 928-1781

Thomas Gunderson, Deputy Division Leader, Health, Safety, and Environmental Division, Los Alamos National Laboratory

Richard Kibler, Director, Pollution Abatement Engineering Division, Office of the Assistant Secretary of Defense (Production and Logistics), U.S. Department of Defense

4:45 pm

ADJOURNMENT OF FIRST DAY'S SESSIONS

FRIDAY, NOVEMBER 16, 1980

8:30 am

LEGISLATIVE SESSION

North Collison Room

This session will allow the regulated community to meet and exchange views with those who have had a hand in constructing the legislative framework for waste regulations. Speakers will provide guidance to the audience on developing initiatives for pushing legislative action, and will provide an update on the status of Land Disposal restrictions.

Moderator: *Roger Land*, Senior Engineering Specialist, Bechtel National Inc.

Panel: *Madeline Creedon*, Counsel, U.S. Senate Armed Services Committee

Sue Sheridan, Counsel, U.S. House of Representatives Committee on Energy and Power

Mary Louise Wagner, Professional Staff Member, U.S. Senate Committee on Energy and Natural Resources

Sam Fowler, Counsel, U.S. House of Representatives Interior Committee, Subcommittee on Energy and the Environment

Dan Berkovitz, Counsel, Senate Committee on the Environment and Public Works

11:30 am

WORKSHOP ADJOURNS