

American Nuclear Society

Conference on Nuclear Training and Education

CONTE 2007

February 4-7, 2007
Jacksonville, Florida, USA

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
www.proceedings.com

ISBN: 978-1-60423-731-3

American Nuclear Society
Conference on Nuclear Training and Education
2007

TABLE OF CONTENTS

New Educational Partnerships.

Session Chair: *Ann Winters (INPO)*

**Successful Partnerships for Radiation Protection Technology Curriculum
Development in Support of the U.S. Nuclear Power Industry1**

*William H. Miller, Gayla Neumeyer, David Jonassen, Matthew Schmidt, Matthew Easter, I. Gelu
lonas, Rose Marra, Geetika Agarwal (Univ of Missouri, Columbia), Randy Etter, Bruce Meffert
(Linn State Tech College Advanced Technol Ctr)*

World Nuclear University Summer Institute4

Philippe Hauw (WNU) Gilbert J. Brown (Univ of Massachusetts Lowell)

**A New Paradigm for Radiation Protection Technology Education
and Training Utilizing the ASK System6**

*Matthew Schmidt, Matthew Easter, David Jonassen, William Miller, I. Gelu lonas (Univ of
Missouri, Columbia)*

**The Dalton Nuclear Institute's New Partnerships Supporting Nuclear
Education and Research8**

P. J. A. Howarth, J. Billowes (Univ of Manchester)

Networking in Nuclear Education Through EU25.....10

Joseph Safieh (CEA/President, ENEN)

Training Educators: Pre-College Outreach in Nuclear Engineering11

Lisa Marshall, Mohamed Bourham (NCSU)

E-Learning Strategies—I.

Session Chair: *Brian Hajek (Ohio State)*

**Reactor Operations Training via Web-Based Access to the UMass-Lowell
Research Reactor13**

John R. White, Leo M. Bobek (Univ of Massachusetts Lowell)

Retaining Knowledge Through Threaded Discussions17

Pamela Aigner, David W. Helling, Lorraine F. NewHaven (Westinghouse Electric)

**Technology Enhanced Nuclear Engineering Education with Distance Learning
Applications19**

Gregory A. Moses (Univ of Wisconsin, Madison)

Next Generation Training—Intelligent Training Aids21

Richard Miller, James McCarthy, Dennis McLain (Sonalysts)

E-Learning Strategies—II.

Session Chair: *Brian Hajek (Ohio State)*

Multipoint Technologies for Interactive Distance Education23

J. Wesley Hines (Univ of Tennessee), Brian K. Hajek (Ohio State)

Web-Based Training and Educational Modules for PRA Qualification and Curriculum.....	25
---	-----------

Yehia F. Khalil (Yale Univ), Frank J. Rahn (EPRI)

Online Education Programs for Workforce Recruiting and Development	27
---	-----------

Devon Sheldon (EPCE)

Dry Cask Storage Computer-Based Training	29
---	-----------

Frank S. Tsakeres, Steve Pettinger, Karen Pettinger, William McNeil (NWI Consulting)

Production Progress and Development of Distance Education Modules at Texas A&M University, Nuclear Science Center in 2006.....	31
---	-----------

Wen-Hsing Hsu, Warren D. Reece (Texas A&M), Josh Smith (NorthStar Interactive Media)

Human Performance Improvement.

Session Chair: *Michael Robinson (Bechtel Bettis)*

Accelerating the Development of Expert Program Evaluators	33
--	-----------

Michael A. Robinson (Bechtel Bettis)

Managing Risk and Plant Performance Through Improved Human Performance.....	35
--	-----------

Richard P. Coe (South Carolina State University), Patricia A. Lake (Excelsior College), invited

Throughput Assessment Screening Evaluation.....	38
--	-----------

Frank S. Tsakeres (NWI Consulting)

Starting Up Human Performance Improvement at a Multi-Program National Laboratory: The INL's Roadmap and Lessons Learned.....	40
---	-----------

Robert E. Richards, Sheri L. Martin (INL)

Analyzing Personnel Performance Causes	41
---	-----------

R. Chevalier (Certified Performance Technologist), T. Muschara (INPO)

Training for Performance Improvement.

Session Chair: *Kent Hamlin (INPO)*

Revision of the ACAD Documents for Licensed Operator Continuing Training and Simulator Training	43
--	-----------

Patrick Berry (INPO)

The Silver Bullet of Training Performance Indicators.....	44
--	-----------

Paul C. Manning (INPO)

Leadership Development.

Session Chair: *Art Friedman (Exelon)*

Leadership Training for Supervisors.....	46
---	-----------

John Sowagi, Kathy Kenwell, Louise Hastie (OPG)

A Manager's Guide to Evaluating Training and the Work Environment to Increase Organizational Performance	47
<i>J. LeClair, A. Kazennov, R. Chevalier, R. Templeton, H. Andersson (Excelsior College)</i>	
Staffing Strategies in Preparation for the Nuclear Renaissance	49
<i>Harry B. Bernhard (Bernhard Management Consulting)</i>	
Excelsior College: College Credit for Nuclear Industry Training	52
<i>Wayne A. Applewhite, Jane LeClair (Excelsior College)</i>	
Nuclear Engineering Education.	
<i>Session Chair: Gilbert Brown (Univ of Massachusetts Lowell)</i>	
New Directions in University Nuclear Engineering Support	54
<i>John Gutteridge (DOE)</i>	
Developing a Communications Course for Engineers	55
<i>Audeen Fentiman, Tatjana Jevremovic, Chan Choi, Martin Bertodano (Purdue Univ)</i>	
Reinvigorating University-Based Education, Research and Development in Nuclear Engineering and Technology	56
<i>Wm. J. Garland (McMaster Univ)</i>	
Education and Research Programs in the Institute of Nuclear Engineering and Science of National Tsing Hua University in Hsinchu, Taiwan	58
<i>Ji-Jung Kai, Chunkuan Shih (Nat'l Tsing Hua Univ)</i>	
Reactor Operator Summer Experience Program	59
<i>Michael Dunlevy, Gilbert Brown (Univ of Massachusetts Lowell)</i>	
Utility Accreditation—Past, Present, and Future.	
<i>Session Chair: Kent Hamlin (INPO)</i>	
Accreditation of Technical Training in British Energy: A Template for Europe and Beyond	61
<i>John Moares (British Energy Training Standards Accreditation Board)</i>	
Workforce Development.	
<i>Session Chair: Carol Berrigan (NEI)</i>	
Improving Today's Work Force Performance—Ensuring Tomorrow's	63
<i>Ken Huffman (EPRI)</i>	
NPP Personnel Training: Challenges, Trends and Improvements	64
<i>A. Kazennov, T. Mazour, A. Kosilov, J. Cleveland (IAEA)</i>	
Applying Instructional Analysis Techniques to Support Workforce Performance Management Goals	66
<i>Brad Cooper (Plateau Systems)</i>	

Developing a Quality Entry Level Technician Workforce for the Twenty-First Century Commercial Nuclear Industry68

James R. Sherrard (TRCC), Trad A. Horner (Dominion Nuclear Training, Milestone Power Station)

A New Nuclear Educational Program at the University of Pittsburgh.....69

Larry Foulke, Larry Shuman, Minking Chyu (Univ of Pittsburgh)

Where Did Everybody Go? A Discussion of the Growing Demand for, and Shrinking Supply of, Operators and Operator Instructors71

Patrick Berry (INPO)

Global Nuclear Personnel Training—I.

Session Chair: *Philip Beeley (HMS SULTAN)*

International Training Program: 3D S.UN.COP—Scaling, Uncertainty and 3D Thermal-Hydraulics/Neutron-Kinetics Coupled Codes Seminar72

A. Petruzzi, F. D'Auria (Universita di Pisa), T. Bajs (Univ of Zagreb) F. Reventos (UPC - SEN), Y. Hassan (Texas A&M)

The French Sodium School: Teaching Sodium Technology Throughout the World75

G. Rodriguez, F. Baque, L. Martin, B. Vray (CEA)

Nuclear Nonproliferation and International Security Master of Science Degree at Obninsk Technical University for Nuclear Power Engineering (IATE).....76

Irina Vorobieva (Obninsk State Technical Univ for Nuclear Power Eng)

The Role of a Nuclear Training Centre in Slovenia77

Igor Jenčič (Jozef Stefan Inst)

The ENETRAP and EUTERP Project: Contributing to the European Harmonization of E&T in Radiation Protection.....78

Michèle Coeck (SCK-CEN), Jan van der Steen (NRG)

Human Resource Development at Pakistan Nuclear Regulatory Authority80

Shahid A. Mallick (PNRA), Nasir Afghan, Anwar Khurshid (LUMS), Shakilur Rahman (PNRA)

Global Nuclear Personnel Training—II.

Session Cochairs: *Pierre Tremblay (Ontario Power), Irina Vorobieva (Obninsk State Univ)*

Operator Characteristics and Crew Composition in Crew Performance82

Seth A. Kaplan (George Mason Univ), Mary J. Waller (Univ of Maastricht), Michael J. Cote (Dominion Nuclear Connecticut)

A Simplified Response to a Dirty Bomb Attack.....84

James L. Conca (New Mexico State Univ)

Recruiting Operators for Israel Research Reactor 2 (IRR2)86

Roy Freud, Ronen Harari, Daniel Tsemach (Nuclear Research Center, Negev)

Unlocking the Power of Pivot Tables for Workforce Trend Analysis.....87

John Wheeler (Entergy)

Nuclear Education, Training and Qualification of Personnel Within the Royal Navy.....88

P. A. Beeley, C. Smith, D. Ritchie, M. Evans, A. Foster, M. Paton (HMS SULTAN)

Knowledge Retention.

Session Chair: *Andrey Kosilov (IAEA)*

Successful UK Clean-up and Skills Retention Through Successful Collaboration90

John W. Roberts (Univ of Sheffield)

Establishment of the National Nuclear Archives.....91

David Klepich, Catherine Plowman (INL)

Knowledge Retention at JAERI and 8 Resembled Foreign Research Institutes.....93

Kazuaki Yanagisawa (JAEA)

Nuclear Knowledge Retention During Transition Period in Lithuanian Energy System95

J. Gyls , S. Ziedelis, (Kaunas Univ of Technology), V. Gediminskas (Ignalina Nuclear Power Plant)

Networking for Education, Training and Knowledge Transfer97

Yanko Yanev, Andrei Kosilov, Peter Gowin, Keiko Hanamitsu (IAEA)

Oak Ridge National Laboratory’s Safeguards Laboratory and Educational Programs99

A. A. Solodov, C. A. Gariazzo, H. Y. Rollen, Jr. (ORNL)

Plenary: Nuclear Training and Education—A Vital Link to a Successful Renewed Nuclear Energy Option

Keynote Speaker: Nuclear Power in Developing Countries: How Can We Help?100

Dr. Robert L. Long—Past President, ANS (Nuclear Stewardship), invited