Course Synopsis: We invite you to attend MIT's Nuclear Plant Safety Course in Cambridge, MA, from June 15-20, 2020. Come hear from some of the most distinguished speakers in the nuclear industry about the safety and regulatory issues of operating and planned reactors in the U.S. and other countries.

Topics will include:

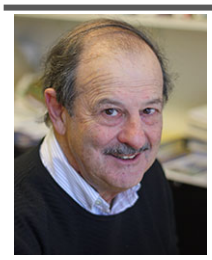
- Operating reactor safety and licensing
- New reactor safety and licensing
- Risk-informed operations
- Spent fuel storage management
- Cybersecurity
- Life extension of operating reactors to 80 years
- International perspectives on reactor safety
- High performance fuel
- PWR and BWR materials issues
- Seismic safety

Who Should Attend:

Degree-holding engineers and scientists with some knowledge of nuclear technology, who are or will be participating in the design, construction, operation, or regulatory safety review of all nuclear installations.

Learning Objectives:

- Describe safety and regulatory issues of operating nuclear reactors in the U.S. and other countries.
- Assess new safety developments, such as risk-informed operations, life extension, and advanced fuels.
- Examine advanced reactors, their designs, and their safety characteristics.
- Understand the issues of fuel storage and licensing of spent fuel repositories.



Neil E. Todreas

KEPCO Professor of Nuclear Science and Engineering, and Professor of Mechanical Engineering

Neil is an expert in thermal and hydraulic aspects of nuclear reactor engineering and safety analysis. He led the MIT NSE Department from 1981-1989. He has served extensively for government, utility, industry review committees, and international scientific review groups. He has written three books and over 250 papers on nuclear reactor energy and safety features. He is a fellow of ANS and ASME, and a member of the National Academy of Engineering.

Emilio Baglietto

Associate Professor of Nuclear Science and Engineering

Emilio is currently the thermal hydraulics lead for the DOE sponsored Consortium for Advanced Simulation of Light-Water Reactors (CASL). Emilio holds a unique experience in the development and application of CFD methods in support to reactor licensing. Areas of research range from single phase turbulence modeling to fluid structure interactions, CFD application to severe accident analysis, hydrogen diffusion and combustion in reactor containments and corium relocation.

Michael Short

Associate Professor of Nuclear Science and Engineering

Michael has 18 years of research experience in the field of nuclear materials. His group's research is a mixture of large-scale experiments, micro/nanoscale characterization, and multiphysics modeling & simulation. The main areas of Short's research focus on 1) Non-contact, non-destructive measurement of irradiated material properties, 2) Preventing the deposition of CRUD in nuclear reactors, and 3) Radiation decelerated corrosion.

EARLY BIRD DISCOUNTS may apply (see website). A limited number of ½-tuition scholarships are available upon request for faculty of US educational institutions. **Register online at http://shortprograms.mit.edu/nps**

BRIEF HISTORY OF THE MIT NUCLEAR SAFETY COURSE

The Safety Course was initiated in 1966 by Prof. Theos Thompson, who later became an AEC commissioner. Professor Norman C. Rasmussen directed the course from 1970 until 1989, some of these years as co-director with Profs. Arden L. Bement, Mujid S. Kazimi, Benoit Forget, and Neil E. Todreas, who has co-directed the course since 1975. It is currently under the directorship of Profs. Neil E. Todreas, Emilio Baglietto, and Michael Short. Until 1998, the course had been known as the Nuclear Reactor Safety Course, but has had several name changes since then. In 2005, it was renamed the Nuclear Plant Safety Course. The course lecturers have always been among the foremost experts on reactor safety and regulations from industry, regulatory bodies, and academia.

Professors: Emilio Baglietto, Michael Short, Neil E. Todreas

NUCLEAR PLANT SAFETY COURSE

June 15-19, 2020
MIT Room TBA

TIMES	PERSPECTIVES ON SAFETY	REACTOR SAFETY	NEW BUILDS	REACTOR TECH/ OPERATIONS	MATERIALS FUEL SAFETY
	Mon. 6/15/20	**Tues. 6/16/20**	**Wed. 6/17/20**	**Thurs. 6/18/20**	**Fri. 6/19/20**
8:10-8:30a	**Course Overview** **Prof. Emilio BAGLIETTO**, MIT	**PWR Active and Passive Systems** **Dr. Luca ORIANI** Westinghouse	**New Reactors-Industry + Government Perspectives** **Dr. Jennifer UHLE** NEI	**Human Reliability Analysis** **Dr. Dennis BLEY** Buttonwood Consulting, Inc.	**Safety of Spent Fuel** **Dr. Charles FORSBERG** MIT
8:30-9:30a	**Risk Assessment & Applications** **Dr. George APOSTOLAKIS** NRRC-JAPAN				
9:30a	**COFFEE BREAK**	**COFFEE BREAK**	**COFFEE BREAK**	**COFFEE BREAK**	**COFFEE BREAK**
9:45-10:45a	**Current Regulatory Issues** **Mr. Ho NIEH** US NRC	**Industry Perspective on Safety** **Mr. Douglas TRUE**, NEI	**Licensing Processes** **Mr. William RECKLEY** US NRC	**Digital Control Issues** **Dr. Douglas CHAPIN** MPR Associates	**Decommissioning** **Dr. Andrew KADAK** Kadak Associates, Inc.
10:45-11:45a	**International Nuclear Safety Perspective – IAEA Viewpoint** **Dr. Richard MESERVE** US NRC – Former Chairman	**Multi-Unit Sites** **Dr. George APOSTOLAKIS** NRRC-JAPAN	**NuScale Design and Licensing** **Dr. Jose REYES** NUSCALE CTO	**Lessons Learned from the Three Severe Accidents** **Dr. Joy REMPE** Rempe and Associates, LLC	**Fuel Safety Issues** **Mr. Zeses KAROUTAS** Westinghouse
11:45a	**LUNCH**	**LUNCH**	**LUNCH**	**LUNCH**	**LUNCH**
1:00-2:00p	**International Nuclear Safety Perspective – NEA Viewpoint** **William D. MAGWOOD IV** Director-General NEA	**Seismic Safety** **Dr. Robert BUDNITZ** LBNL	**LWR Materials I** **Prof. Ronald BALLINGER** MIT	**Fukushima Current Situation** **Mr. Hideki MASUI** TEPCO	**LWR Materials II** **Prof. Ronald BALLINGER** MIT
2:00p	**COFFEE BREAK**	**COFFEE BREAK**	**COFFEE BREAK**	**COFFEE BREAK**	
2:15-3:15p	**Safety of Worldwide Nuclear Operations** **Tom MITCHELL** WANO– Chairman	**Physical and Cyber Security** **Mr. Brian HOLIAN** US NRC	**Regulation-Canadian View** **Mr. Marcel DE VOS** Canadian Commission (CNSC)	**Operational Safety** **Ms. Susan LANDAHL** Exelon	**2:00-3:00 pm** **PANEL DISCUSSION**
3:15-4:15p	**PANEL DISCUSSION**	**PANEL DISCUSSION**	**PANEL DISCUSSION**	**PANEL DISCUSSION**	
Activities	**Reception** Time: 4:30p Location: MIT TBD	**MIT Laboratory Tour** Time: 4:30p Location: MIT NW13	**MIT Reactor Tour** Time: 5:00p Location: MIT NW12	**Dinner** Time: 5:30p Location: TBD	Updated 11/13/19

LECTURERS

Our lecturers are selected among the current authorities on nuclear power plant technology, operations, safety, and regulations in industry, government, and universities. They will provide authoritative answers in their technical fields, though their opinions will not necessarily present the official views of any group with which they may be associated.

NATIONAL LABORATORIES

- **Dr. Robert J. Budnitz**, Staff Scientist, Energy Geosciences Division, Lawrence Berkeley National Laboratory, University of California

VENDORS

- **Mr. Zeses Karoutas**, Chief Engineer Nuclear Fuel, Global Tech. Office, Westinghouse Electric Co.
- **Dr. Luca Oriani**, VP Plant Engineering & Licensing, Westinghouse Electric CO
- **Dr. Jose Reyes**, CTO, NuScale Power

CONSULTANTS

- **Dr. Dennis C. Bley**, President, Buttonwood Consulting, Inc.
- **Dr. Douglas Chapin**, Principal, MPR Associates, Inc. (Emeritus)
- **Dr. Andrew Kadak**, Kadak Associates Inc., Former CEO of Yankee Atomic
- **Dr. Joy Rempe**, Principal, Rempe & Assoc. LLC

ACADEMIA

- **Prof. Ronald G. Ballinger**, Nuclear Science and Engineering, and Materials Science and Engineering, MIT
- **Dr. George Apostolakis**, MIT Professor Emeritus and Head, Nuclear Risk Research Center, Japan
- **Dr. Charles Forsberg**, Principal Research Scientist, Exec. Director, MIT Nuclear Fuel Cycle Project, Director and PI, Fluoride Salt-Cooled High-Temperature Reactor Project, MIT

NUCLEAR ENERGY INSTITUTE

- **Mr. Douglas True**, Senior VP and Chief Nuclear Officer, NEI
- **Dr. Jennifer Uhle**, VP Generation & Suppy, NEI

NUCLEAR ENERGY AGENCY

- **William D. Magwood, IV**, Director General of the OECD Nuclear Energy Agency, NEA

REGULATORY

- **Dr. Richard Meserve**, Former Chair (retired), Nuclear Regulatory Commission (US NRC)
- **Mr. Brian Holian**, Director, Nuclear Security and Incident Response, (US NRC)
- **Mr. Ho Nieh**, Director, Office of Nuclear Reactor Regulation (US NRR)
- **Mr. William Reckley**, Senior Project Manager, Advanced Reactor Program (US NRO)
- **Mr. Marcel de Vos**, Senior Project Officer, New Major Facilities Licensing Division, Canadian Nuclear Safety Commission (CNSC)

UTILITIES

- **Ms. Susan Landahl**, Senior VP, Exelon Generation Company
- **Mr. Hideki Masui**, Deputy Chief Nuclear Officer, Tokyo Electric Power Co. Holdings
- **Mr. Tom Mitchell,** Chairman WORLD ASSOCIATION OF NUCLEAR OPERATORS (WANO)