

NRC-RES/EPRI Fire PRA Workshop 2012

Session I: July 16-20, 2012
Session II: September 24-28, 2012

Location: Bethesda Marriott
 5151 Pooks Hill Road
 Bethesda, MD 20814
www.bethesdamarriott.com
 (301)897-9400

Course Schedule:

| Session | Begins | Ends |
|---------|------------------------------|--|
| I | 8 a.m., Monday, July 16 | 12:00 p.m., Friday, July 20, 2012 |
| II | 8 a.m., Monday, September 24 | 12:00 p.m., Friday, September 28, 2012 |

| DAY 1 Mon July 16 Mon Sept 24 | DAY 2 Tue Jul 17 Tue Sept 25 | | DAY 3 Wed Jul 18 Wed Sept 26 | DAY 4 Thu Jul 19 Thu Sept 27 | DAY 5 Fri Jul 20 Fri Sept 28 |
|--|------------------------------------|---|------------------------------------|------------------------------------|------------------------------------|
| 8a – 5p | 8a – 10a | 10:30a – 5p | 8a – 5p | 8a – 5p | 8a – 12p |
| Module 0a: Principles of PRA | Introduction | Module 1: PRA (3.5 days) | | | |
| Module 0b: Principles of EE | | Module 2: Electrical Analysis (3.5 days) | | | |
| Module 0c: Principles of Fire Science | | Module 3: Fire Analysis (3.5 days) | | | |
| Module 0d: Principles of HRA | | Module 4: HRA (3.5 days) | | | |
| * | | Module 5: Advanced Fire Modeling (3.5 days) | | | |

*There is no Module 0 for Advanced Fire Modeling. It is assumed that participants in this module have either taken Module 3 or are familiar with the basics of fire analysis. Enrollees may either attend a module of their choice from Modules 0a-0d or arrive at the workshop on Tuesday morning.

Instructors

Learn from some of the leading experts in government and private industry.

Module 1 PRA

Mr. Richard Anoba is President of Anoba Consulting Services, LLC. He holds a Master of Science degree in Nuclear Engineering from the Massachusetts Institute of Technology along with a Bachelors of Science in Nuclear Engineering from the University of California at Santa Barbara. With over thirty years of experience in the Nuclear Engineering field, Mr. Anoba has extensive experience in the areas of engineering analysis, system reliability analysis, safety analysis, Probabilistic Risk Assessment (PRA), project management, design engineering, and power plant operation. Mr. Anoba has been a key contributor in the development, update, and review of a number of Internal Events PRA models (both Level 1 and Level 2) and a number of External Events Models (seismic, fire, and flood).

Jeffrey L. LaChance is a Distinguished Member of the Technical Staff in the Risk & Reliability Department of Sandia National Laboratories. He has 30 years of experience in commercial nuclear reactor safety. He has significant experience in performing Probabilistic Risk Assessments (PRA) on a variety of facilities including nuclear reactors and fuel cycle facilities, weapons storage facilities, and chemical plants. In addition to performing PRAs, he has developed innovative PRA methods, helped write an ASME standard on PRA, and supports the Nuclear Regulatory Commission (NRC) on developing PRA quality requirements. He has been involved in the development of risk-informed, performance-based regulations for nuclear reactors since the initiative began at the NRC in 1995. He has been instrumental in the generation of risk-informed regulatory frameworks for existing and future reactors and has been involved in establishing several risk-informed regulations. He has a Bachelors degree in General Engineering (Nuclear Option) from Idaho State University.

Module 2: Electrical Analysis

Mr. Gabriel Taylor is a Fire Protection Engineer employed by the U.S. Nuclear Regulatory Commission in the Office of Nuclear Regulatory Research. He has seven years of experience working for the NRC, 5 of those years working in the area of fire-induced electrical cable failure. He has a B.S. in electrical engineering from the Pennsylvania State University and a M.S. in fire protection engineering from the University of Maryland.

Mr. Dan Funk

Module 3: Fire Analysis

Dr. Francisco Joglar is Senior Consultant with the Kleinsorg Group Risk Services. He holds a Master of Science degree in Fire Protection Engineering from the University of Maryland along with a Ph.D. in Reliability Engineering from the same institution. With over ten years of

experience in fire protection for commercial nuclear plants, Dr. Joglar has extensive experience in the areas of fire modeling, and Fire Probabilistic Risk Assessment (FPRA), and project management. Dr. Joglar has been a key contributor in the development, update, and review of a number of industry methodologies associated with Fire Modeling and FPRA, and principal analysts in a number of FPRA's.

Mr. Steve Nowlen is a Distinguished Member of the Technical Staff at Sandia National Laboratories. He has over 28 years of experience with the U.S. NRC-sponsored fire protection and fire risk research programs and was RES's technical lead during development of NUREG/CR-6850, EPRI TR 1011989. Mr. Nowlen is also vice-chair of the Fire Writing Team and a member of the Subcommittee on Standards Maintenance under the ASME Committee for Nuclear Risk Management. Mr. Nowlen holds B.S. (with high honor, Phi Beta Kappa) and M.S. degrees in Mechanical Engineering from Michigan State University.

Module 4: HRA

Dr. Susan E. Cooper is a HRA/PRA specialist employed by the USNRC. She has 25 years experience in HRA, PRA, risk-informed decision-making, and other related areas for a variety of technologies, including commercial nuclear power. She has a PhD in Nuclear Engineering from Massachusetts Institute of Technology.

Mr. Jeff Julius is a Technical Manager in the Risk and Reliability Group at Scientech. He holds a Bachelor of Science in Engineering from the University of Washington. With over 30-years of experience in the Nuclear Engineering field, Mr. Julius has extensive experience in the areas of plant operations, human reliability and engineering analyses. Mr. Julius developed a number of internal events PRA models and Fire PRA models, is project manager for the EPRI HRA Users Group, and represented the industry as an author of the joint *EPRI/NRC-RES Fire Human Reliability Analysis Guidelines* (NUREG-1921).

Ms. Erin Collins is a Senior Risk Analyst employed by Science Applications International Corporation (SAIC). She has 28 years experience in PRA specializing in Human Reliability Analysis and component reliability data collection and analysis. She has a B.S. in Environmental Science from Elmira College. Ms. Collins is a contributing author on NUREG-1921/EPRI 1023001, the EPRI/NRC-RES Fire HRA Guidelines, and has participated in four fire HRAs for utility clients.

Module 5: Advanced Fire Modeling

Dr. Kevin McGrattan is a mathematician in the Fire Research Division of the National Institute of Standards and Technology. He is the principal developer of the Fire Dynamics Simulator, a computational fluid dynamics model of fire. He joined the staff of NIST in 1991 after receiving a doctorate from the Courant Institute of New York University. He received his bachelors from the School of Engineering and Applied Science of Columbia University in 1987.

Dr. Fred Mowrer is the Director of Fire Protection Engineering Programs at the California Polytechnic State University in San Luis Obispo, CA, as well as a Professor-in-Residence in the program. Dr. Mowrer spent 21 years on the faculty of the Department of Fire Protection Engineering at the University of Maryland before retiring with emeritus status in 2008. He was the principal developer of the quantitative methods of fire hazard analysis incorporated in the original FIVE methodology developed by EPRI in the early 1990s and has provided consulting services in the nuclear fire protection field since then. Dr. Mowrer received his PhD in Fire Protection Engineering and Combustion Science from the University of California, Berkeley, in 1987. He also received his BS degree in Fire Protection and Safety Engineering from the Illinois Institute of Technology in 1976.

Mr. David Stroup is a Senior Fire Protection Engineer employed by the U.S. Nuclear Regulatory Commission in the Office of Nuclear Regulatory Research. He has been with the NRC for five years and has over 30 years of fire protection engineering and fire modeling experience with the Federal government and private industry. He has a B.S. in fire protection engineering and an M.S. in mechanical engineering from the University of Maryland. Mr. Stroup is a registered professional engineer and fellow of the Society of Fire Protection Engineers.

Book a Room



A block of rooms has been reserved at the Bethesda Marriott for participants in the NRC-RES/EPRI Fire PRA Workshop with rooms available to all participants at the government per diem rate. Use the link below to make a reservation at our group rate.

https://resweb.passkey.com/Resweb.do?mode=welcome_ei_new&eventID=9689816

Or check the main site to see if lower rates are available:

<http://www.marriott.com/hotels/travel/wasbt-bethesda-marriott/>

Getting there

Metro:

www.mwata.com

Closest Metro Stop: **Medical Center** on the Red Line



Visitor Center [west] Station entrance

Buses, Kiss & Ride

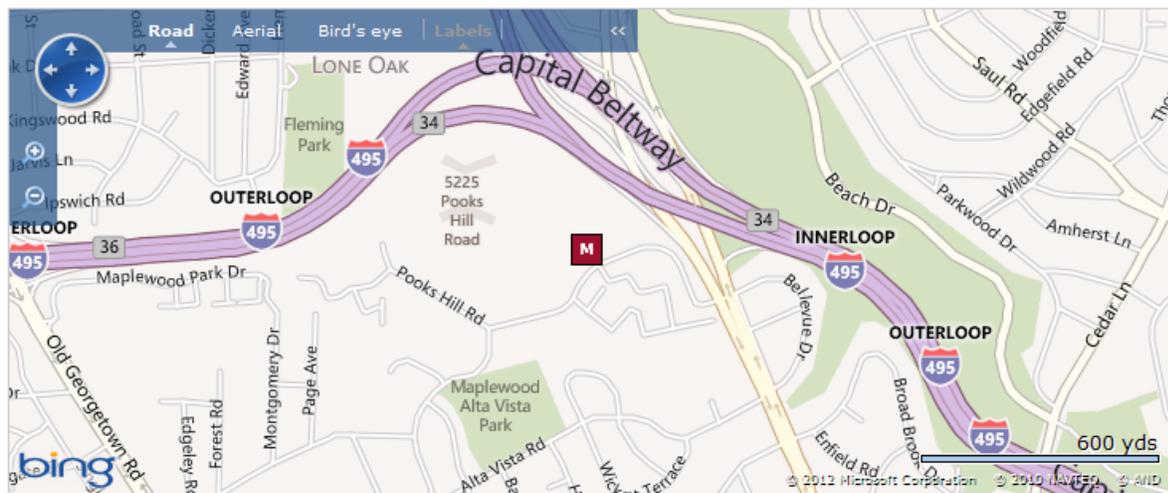
South Dr.

The Marriott provides a shuttle from the Medical Center Metro stop with pick-ups every 30 minutes in from 6:30 AM until 11:30 PM. The shuttle stop is located in the Metro Kiss and Ride parking lot on the opposite side of the bus lane outside the Metro entrance.

[Marriott Shuttle Schedule](#)

Driving:

Bethesda Marriott
5151 Pooks Hill Road
Bethesda, Maryland 20814



Parking:

Parking at the Marriott is available at a rate of \$13/day

Nearest Airport :

Regan National Airport (DCA)

Other Area Airports:

Dulles International Airport (IAD)

Baltimore (BWI)

Lunch Options

The Marriott at Pooks Hill is situated in an area that is somewhat remote from Bethesda's main restaurant cluster so the hotel has provided us with a couple of lunch options in their onsite Restaurant Agio.

For a flat rate of \$18 including tax you may partake in a specially prepared buffet offering a selection of hot entrees, salads, and sandwiches with a choice of coffee, tea or soda each day.

You may also order lunch off the regular [Agio menu](#).

Enjoying Bethesda, MD and the surrounding area:

After each day's training is done we encourage you to take advantage of the amenities in the surrounding area. The Bethesda Marriott offers complimentary shuttle service to the heart of downtown Bethesda and to the White Flint Mall from 5:00 PM until 11:00 PM daily departing the hotel every hour. You may also take the hotel shuttle to the Metro if you'd like to venture further into the DC area.

[Marriott Shuttle Schedule](#)



<http://www.downtownbethesda.com/>

<http://www.shopwhiteflint.com/>

Additional Information:

Kendra Hill

Office Of Nuclear Regulatory Research

U.S. Nuclear Regulatory Commission

21 Church St., Mail Stop CSB 4C7M

Rockville, MD 20850

Email: kendra.hill@nrc.gov

Phone: (301) 251-3300

Fax: (301) 251-7424

Nicholas Melly

Office Of Nuclear Regulatory Research

U.S. Nuclear Regulatory Commission

21 Church St., Mail Stop CSB 4C7M

Rockville, MD 20850

Email: Nicholas.melly@nrc.gov

Phone: (301) 251-7916

Fax: (301) 251-7424

Rick Wachowiak

Electric Power Research Institute

3031 260th St.

Thor, IA 50591

Email: rwachowiak@epri.com

Phone: (515) 378-3120

Bijan Najafi

Science Applications International Corporation

1671 Dell Avenue, Suite 100

Campbell, CA 95008

Email: bijan.najafi@saic.com

Phone: (408) 364-4726

Fax: (301) 364-4728