10th Nuclear Plants Current Issues Symposium:
Assuring Safety against Natural Hazards through Innovation & Cost Control

Marriott City Center • Charlotte, North Carolina | December 11-14, 2016

Distinguished Speakers

John W. (Bill) Pitesa  
Senior Vice President & Chief Nuclear Officer  
Duke Energy Corporation  
Charlotte, North Carolina

Marvin S. Fertel  
President & Chief Executive Officer  
Nuclear Energy Institute  
Washington, DC

The Honorable Kristine L. Svinicki  
Commissioner  
U.S. Nuclear Regulatory Commission  
Rockville, Maryland (Invited)

Sponsors

Cosponsors

Register online at go.ncsu.edu/NPCIS or Call 919.515.2261
WHO SHOULD ATTEND

Executives, managers & senior engineers
- Operators
- Vendors
- Architect-engineers and consultants
- Regulatory agencies

Decision makers & researchers
- Industry organizations
- Government agencies
- Laboratories
- Universities

Everyone who must be up-to-date with current issues

WHY YOU SHOULD ATTEND

Start 2017 armed with up-to-date knowledge
- Learn from government, industry & other experts
- Discover how to address real-life issues successfully

Reap the benefits of a unique symposium
- Three-day sequence of single, non-breakout sessions
- Great opportunity for one-to-one exchange & networking

SYMPOSIUM HIGHLIGHTS

Latest on Seismic Hazard
- NGA-East: Next-Generation Attenuation Model for Central & Eastern United States
- FIRS: Foundation Input Response Spectra for Non-Ergodic Ground Motion Model
- PSHA Testing for Probabilistic Seismic Hazard Analysis

Advances in Seismic Fragility
- EPRI Research & Methodology
- Metallic Component Margins
- High Frequency Ductility

Cutting-Edge Methods for Seismic Risk Assessment
- Analytical, Experimental & Experience-Based
- High-Performance Computing & Nonlinear Simulation
- Real-Life, Recent Performance Data
- Correlations & Dependencies

Reducing Cost via Uncertainty in SSI Analysis
- New ASCE 4 Standard
- Nonlinear SSI Analysis, High-Performance Computing
- Improved Seismic Fragility
- SASSI Verification & Validation-U.S. Department of Energy Project

Early Movers of SPRA-Lessons Learned
- Diablo Canyon, North Anna, Peach Bottom & Watts Bar Plants
- Duke Energy, Entergy & Southern Nuclear Fleets

State-of-the-Art: High Wind Hazard
- Operating Experience, State of the Art & EPRI Research
- Lessons Learned from PRAs for Duke Energy Fleet & St. Lucie Plant

Latest on Flood Hazard
- TVA Paleo Flood Investigations
- Uncertainty in PFHAs to Reduce Cost

Forward Looking-External Hazard Updates
- DOE Guidelines
- Canadian Perspective

Cost-Savings-FLEX & Risk-Based Operation
- Taking Credit from FLEX
- Risk-Based Plant Operation

New: Seismically-Induced Fires & Floods-EPRI Guidance

KEYNOTE SPEAKERS

Presenting the Case for Nuclear Energy in the United States
Donald R. Hoffman
EXCEL President & CEO
Co-chair, Special Committee & Former President, ANS

Nuclear Energy: A Key Component to a Clean Energy Strategy
The Honorable John F. Kotek
DOE Assistant Secretary for Nuclear Energy (Invited)

Japan and Fukushima Daiichi 5-Years After: What I Thought About Then and What I Think About Now
Woody Epstein
Asia-Pacific Nuclear Safety & Risk Director, Curtiss-Wright, Japan

SPONSORSHIP OPPORTUNITIES

Support the Symposium:
- Associate your company with a prominent event backed by industry leaders
- Establish a relationship with a prestigious university educating the industry's future workforce
- Strengthen your company's position as a leader in the nuclear power industry
- Build and renew relationships with industry decision makers attending and presenting at the event
- Display your products and highlight unique capabilities

We gratefully acknowledge your support:
- Place your company's name and logo in the Symposium brochure and website
- Link to your company's website
- Provide exhibition space for display of your products and services
- Offer one complimentary registration for the Symposium

Contribution tailored to your choice:

For more information on Sponsorship please visit go.ncsu.edu/NPCIS
Preliminary Program

Sunday, December 11
5:00 - 7:00 PM

Welcome Reception and Registration

Monday, December 12
7:00 AM

Registration and Continental Breakfast

8:00 AM

**Session I–Keynote Speaker**

Presenting the Case for Nuclear Energy in the United States

*Donald R. Hoffman*

President & Chief Executive Officer, EXCEL Services Corporation, Rockville, Maryland

Co-chair, Special Committee on Nuclear in the States & Former President, American Nuclear Society

8:50 AM  Break

9:05 AM

**Session II–High Wind Hazard and Probabilistic Risk Assessments (PRAs)**

Risk Assessment for High Winds: State of the Art


EPRI High Wind Research

*Stephen M. Hess*, Principal Technical Leader, Risk & Safety Management Program, Electric Power Research Institute, West Chester, Pennsylvania; and *Leo Shanley*, Manager, Risk-Informed Engineering, JENSEN HUGHES, West Chester, Pennsylvania

Simplified High Wind Evaluations

*Raymond E. Schneider*, Fellow Engineer, and *Kyle D. Hope*, Engineer, Risk Applications & Methods, Westinghouse Electric Company, LLC, Windsor, Connecticut

15 minute  Break/Floating

Industry's High Wind Operating Experience

*Leo Shanley*, Manager, Risk-Informed Engineering, JENSEN HUGHES, West Chester, Pennsylvania; and *Stephen M. Hess*, Principal Technical Leader, Risk & Safety Management Program, Electric Power Research Institute, West Chester, Pennsylvania

Lessons Learned from High Wind PRAs

- St. Lucie Plant
  *Mahmoud Heiba* and *Theodore G. Kulczycky*, Staff Engineers, PRA Group, Nuclear Engineering, NextEra Energy Inc./FPL, Juno Beach, Florida

- Duke Energy Fleet

11:50 AM  Lunch

**Distinguished Speaker**

*John W. (Bill) Pitesa*, Senior Vice President & Chief Nuclear Officer, Duke Energy Corporation, Charlotte, North Carolina

1:50 PM

**Session III–Seismic Hazard**

Next-Generation Attenuation Models for Central & Eastern United States (NGA-East)

*Robert R. Youngs*, Principal Engineer, Environment & Infrastructure, AMEC Foster Wheeler, Oakland, California

Full or Partial Non-Ergodic Ground Motion Models

*Norman A. Abrahamson*, Chief Engineering Seismologist, Pacific Gas & Electric Company, San Francisco, California

Site Amplification and Foundation Input Response Spectra (FIRS) Evaluation for a Partially Non-Ergodic Ground Motion Model

*Norman A. Abrahamson*, Chief Engineering Seismologist, Pacific Gas & Electric Company, San Francisco, California

Principles and Examples of PSHA Testing

*Pierre B. Labbé*, Seismic Risk Expert, New Nuclear Projects & Engineering Division (DIPPN DTI), Electricité de France, Saint-Denis, France

Sensitivity of Hazard Curve Fractiles to Simplified Input Assumptions

3:55 PM Break

4:25 PM

Session IV–Risk-Based Plant Operation
Considerations in Aggregating Risk Results in Risk-Informed Applications
Douglas E. True, Executive Vice President, JENSEN HUGHES, Walnut Creek, California

How We Factor in Risk Insights from External Hazards in Everyday Plant Decisions
Eugene M. Kelly, Senior Manager, Risk Informed Applications, Exelon Generation, Kennett Square, Pennsylvania

Crediting FLEX in Risk-Informed Applications
Donald E. Vanover, Vice President, Risk Informed Programs, JENSEN HUGHES, West Chester, Pennsylvania

5:40 PM Adjourn

Tuesday, December 13

7:00 AM
Registration and Continental Breakfast

8:00 AM
Session V–Keynote Speaker
Nuclear Energy: A Key Component to a Clean Energy Strategy

8:50 AM Break

9:05 AM
Session VI–Seismic Fragility
High Frequency Ground Motion Amplification: A Myth or Reality?
Abhinav Gupta, Director, and Sugandha Singh, Doctoral Student, Center for Nuclear Energy Facilities & Structures, North Carolina State University, Raleigh, North Carolina

The OECD-NEA Programme on Metallic Component Margins under High Seismic Loads (MECOS)
Pierre B. Labbé, Seismic Risk Expert, New Nuclear Projects & Engineering Division (DIPNN DTI), Electricité de France, Saint-Denis, France; G. R. Reddy, Head, Structural & Seismic Engineering Section, Reactor Safety Division, Bhabha Atomic Research Centre (BARC), Trombay, Mumbai, India; Cedric Mathon, Senior Engineer, Basic Design Department, Thermal & Nuclear Research Projects Service (SEPTEN), Electricité de France, Villeurbanne, France; François Moreau, Project Manager, Géodynamique et Structure, Bagneux, France; and Spyros A. Karamanos, Associate Professor, Department of Mechanical Engineering, University of Thessaly, Volos, Greece

High Frequency Ductility
Gregory S. Hardy, Senior Principal, Simpson, Gumpertz & Heger, Inc., Newport Beach, California

15 Minutes Break/Floating

EPRI Seismic Fragility Research
John Richards, Senior Project Manager, Electric Power Research Institute, Charlotte, North Carolina; and Gregory S. Hardy, Senior Principal, Simpson, Gumpertz & Heger, Inc., Newport Beach, California

Seismic Fragility: Screening and Calculation Approaches
Divakar Bhargava, Principal Engineer; and Daniel J. Vasquez, Consulting Engineer, Nuclear Engineering, Dominion Generation, Glen Allen, Virginia

EPRI Seismic Fragility Methodology Report
Gregory S. Hardy, Senior Principal, Simpson, Gumpertz & Heger, Inc., Newport Beach, California

11:50 AM Lunch

Distinguished Speaker
Marvin S. Fertel, President & Chief Executive Officer, Nuclear Energy Institute, Washington, DC
1:50 PM

**Session VII–Seismic Risk Assessment Methods**

Analytical, Experimental and Experience-Based Assessments of Structural Vulnerability for Beyond-Design-Basis Events

Abhinav Gupta, Director, Center for Nuclear Energy Facilities & Structures, North Carolina State University, Raleigh, North Carolina; and Peter I. Yanev, Founder & Partner, Yanev Associates, LLC, Orinda, California

Advanced Seismic PRA Applications for the Nuclear Industry

Chandrakanth Bolisetti, Seismic Researcher, and Justin L. Coleman, Group Lead, Seismic Research Group, Idaho National Laboratory, Idaho Falls, Idaho

Nonlinear Computational Simulations for the Earthquake Response of Nuclear Systems

Jenna Wong and Floriana Petrone, Postdoctoral Fellows, and David B. McCallen, Research Affiliate, Lawrence Berkeley National Laboratory/Associate Vice President, Office of the President, and Frank McKenna, Research Scientist, University of California, Berkeley, California

Experience-Based Seismic Design, Evaluation and Fragilities of SSCs Using Recent Strong-Motion Performance Data

Peter I. Yanev, Founder & Partner, Yanev Associates, LLC, Orinda, California

3:30 PM Break

4:00 PM

**Session VIII–Uncertainty in Soil-Structure Interaction (SSI) Analysis/ Panel**

Co-Chairmen:

Brent J. Gutierrez, Manager, Natural Phenomena Hazards Engineering, Savannah River Site Office, U.S. Department of Energy, Aiken, South Carolina


Application of Nonlinear SSI into SPRA Calculations

Justin L. Coleman, Group Lead, Seismic Research Group, Idaho National Laboratory, Idaho Falls, Idaho

Consistent Modeling for SSI Analysis Using High Performance Computing

Muneo Hori, Professor, Earthquake Research Institute, The University of Tokyo, Tokyo, Japan

New ASCE 4-Based Probabilistic Nonlinear SSI Analysis for Improving Seismic Fragility

Dan M. Ghiocel, President, CEO & Chief of Engineering, GP Technologies Inc., Pittsford, New York

U.S. Department of Energy SASSI Verification and Validation Project

Brent J. Gutierrez, Manager, Natural Phenomena Hazards Engineering, Savannah River Site Office, U.S. Department of Energy, Aiken, South Carolina

The Impact of Ground Motion Incoherence Effects on SSI

Carl J. Costantino, Founder & President, CJC & Associates, Spring Valley, New York

5:40 PM Adjourn

Wednesday, December 14

7:00 AM

Registration and Continental Breakfast

8:00 AM

**Session IX–Keynote Speaker**

Japan and Fukushima Daiichi 5 Years After: What I Thought About Then and What I Think About Now

Woody Epstein, Director, Safety & Risk, Asia-Pacific, Nuclear Division, Curtiss-Wright, Japan

8:50 AM Break

9:05 AM

**Session X–Seismic Probabilistic Risk Assessments (SPRAs): Status and Lessons Learned/ Panel**

Diablo Canyon Plant

Nozar Jahangir, Manager, Technical Services, Diablo Canyon Seismic Engineering, Pacific Gas & Electric Company, Avila Beach, California

Duke Energy Fleet


Entergy Fleet

Richard S. Drake, Civil/Structural Design Engineering Supervisor, Entergy Nuclear, Buchanan, New York

North Anna Plant

Divakar Bhargava, Principal Engineer, Nuclear Engineering, Dominion Generation, Glen Allen, Virginia
15 Minutes        Break/Floating

Peach Bottom Plant

**Philip J. Tarpinian**, Senior Staff Engineer, Exelon Generation, Kennett Square, Pennsylvania

Southern Nuclear Fleet


Watts Bar Plant

**Penny B. Selman**, Senior Program Manager, Seismic/ESQ, Regulatory Design Programs, Nuclear Power Group, Tennessee Valley Authority, Chattanooga, Tennessee

11:50 AM        Lunch

**Distinguished Speaker**

**The Honorable Kristine L. Svinicki**, Commissioner, U.S. Nuclear Regulatory Commission, Rockville, Maryland (Invited)

1:50 PM

**Session XI A–Flood Hazard Assessment**

**Informing TVA’s Flood Hazard Estimation Through Paleo Flood Investigations**


**Accounting for Uncertainty in Probabilistic Flood Hazard Assessments to Reduce Cost**

- **Ahmed “Jemie” Dababneh**, Senior Director, Hydraulics & Hydrogeology, and **Mark A. Schwartz**, Engineering Supervisor, Rizzo Associates, Pittsburgh, Pennsylvania

2:40 PM        Break

2:55 PM

**Session XI B–Seismic Correlations and Dependencies**

**Correlations and Dependencies of Similar SSCs under Earthquake Loads**


**Correlation of Multiple SSCs Failures in SPRA Using Experience Data**

- **Peter I. Yanev**, Founder & Partner, Yanev Associates, LLC, Orinda, California

3:45 PM        Break

4:00 PM

**Session XII–Multi-Hazards/External Hazards Updates**

**EPRI Guidance on Seismically-Induced Fires and Floods**

- **Paul J. Amico**, Senior Risk Consultant & Project Manager, International Strategic Programs, Power Services Group, JENSEN HUGHES, Rockville, Maryland; **Pierre E. Macheret**, Senior Engineer, Risk Analysis, JENSEN HUGHES, Las Vegas, Nevada; and **Robert P. Kassawara**, Manager, Structural Reliability & Integrity, Electric Power Research Institute, Palo Alto, California

**Process for Managing New Data**

- **Jeffrey K. Kimball**, Chief Seismologist, Rizzo Associates, Pittsburgh, Pennsylvania

**Reevaluation Guidelines for DOE Facilities**


**External Hazards Updates: Canadian Perspective**

- **George Stoyanov**, Technical Specialist, Directorate of Assessment & Analysis, Canadian Nuclear Safety Commission, Ottawa, Ontario, Canada

5:40 PM        Adjourn
Symposium Steering Committee

Chairman:

Ajaya Kumar Gupta
Founding Director
Center for Nuclear Energy Facilities & Structures
North Carolina State University
Raleigh, North Carolina

Abhinav Gupta
Director

Stephen J. Eder
CEO & Senior Partner
Facility Risk Consultants, Inc.
Huntsville, Alabama

Bryan A. Erler
President
Erler Engineering, Ltd.
Chicago, Illinois

Dhiren C. Pandya
Manager, Major Projects
Nuclear Engineering
Mechanical & Civil Design
Shearon Harris Nuclear Plant
Duke Energy Corporation
New Hill, North Carolina

Penny B. Selman
Senior Program Manager,
Seismic-ESQ
Regulatory Design Programs
Nuclear Power Group
Tennessee Valley Authority
Chattanooga, Tennessee

Jeremy Aartun
Chief Structural Engineer
Fluor Nuclear Power
Greenville, South Carolina

Dhiren C. Pandya
Manager, Major Projects
Nuclear Engineering
Mechanical & Civil Design
Shearon Harris Nuclear Plant
Duke Energy Corporation
New Hill, North Carolina

Peter H. Southworth
Former Chief Technology Officer
AREVA Inc.
Lynchburg, Virginia

Melvin L. Arey Jr.
Manager
Corporate Design Support
Duke Energy Corporation
Charlotte, North Carolina

George Stoyanov
Technical Specialist, Directorate
of Assessment & Analysis
Canadian Nuclear Safety
Commission
Ottawa, Ontario, Canada

Divakar Bhargava
Principal Engineer
Nuclear Engineering
Dominion Generation
Glen Allen, Virginia

John H. Strumpell
Manager, Fuel R&D
AREVA Inc.
Lynchburg, Virginia

Andrei Blahoianu
Former Director
Engineering Design Assessment
Division
Canadian Nuclear Safety
Commission
Ottawa, Ontario, Canada

Sam W. Swan
Principal
Acceptable Risk, LLC
Albany, California

Robert J. Budnitz
Earth Sciences Division
Lawrence Berkeley National Laboratory
University of California
Berkeley, California

Michael D. Tschiltz
Director
Risk Assessment
Nuclear Energy Institute
Washington, DC

Alice Caponiti
Director
Space & Defense Power Systems
Office of Nuclear Energy
U.S. Department of Energy
Washington, DC

Allan P. Wise
Manager
Fleet Component Engineering
First Energy Corporation
Akron, Ohio

Nilesh C. Chokshi
Site Safety & Environmental Analysis Division
Office of New Reactors
U.S. Nuclear Regulatory Commission
Rockville, Maryland

Pierre B. Labbé
Seismic Risk Expert
New Nuclear Projects & Engineering Division (DIPNN DTI)
EDF
Saint-Denis, France

Andrea Maioli
Principal Engineer
Risk Applications & Methods
Westinghouse Electric Company
Cranberry Township, Pennsylvania

Register online at go.ncsu.edu/NPCIS or Call 919.515.2261
Important Information

Early and Advance registration fees are non-refundable; they may be transferred within an organization, however.

Fee for Standard registration is refundable until December 10, the Saturday before the Symposium.

What is Included

The registration includes attendance in all sessions, certificate of attendance, electronic proceedings, and continental breakfasts, luncheons and breaks during the Symposium.

Attendees are invited to the Sunday evening Welcome Reception.

 neutron options

Lodging and evening meals are not included in the registration fee.

We will provide Certificate of Attendance for the Professional Development Hours (PDH) to those who request it at the Symposium. For required documentation for officially getting the credit, please check with your licensing authority.

Register online at go.ncsu.edu/NPCIS or call 919.515.2261