



## *Seismic Design and Risk Evaluation of Nuclear Plants*

*Dr. Annie Kammerer  
Owner, Annie Kammerer Consulting*

**Abstract:** Since the beginning of the nuclear power industry, the framework and methods used in the seismic design and risk evaluation of the fleet of nuclear power plants in the US has gone through significant change and advancement. This presentation—targeted to the technically-inclined layperson—will cover a wide variety of topics including: basic nuclear plant design concepts (how they work and what can go wrong), why the engineering of nuclear plants is unique and challenging, brief history of seismic regulations, design approaches, and reevaluation efforts, the performance-based and risk-informed methods used in the industry today, the impact of the Fukushima Daiichi accident, including current and future NRC efforts, the NRC, IAEA, and the new global nuclear picture.

**Bio:** Dr. Annie Kammerer is owner of Annie Kammerer Consulting, a firm specializing in seismic hazard and risk consulting for the nuclear energy sector. She is also the executive director of the Consortium of Organizations of Strong Motion Observation Systems (COSMOS), an applied research organization out of at UC Berkeley. Her work is principally focused on analysis and regulatory processes associated with probabilistic seismic and tsunami hazard and risk assessments for nuclear plants and other critical facilities. Prior to starting her own firm, she was Principal Seismologist for the Bechtel Corporation in San Francisco. Prior to that, she spent 7 years at the US Nuclear Regulatory Commission, where she coordinated the NRC Seismic Research Program. At the NRC, she developed the current US guidance on performing seismic hazard assessments and seismic margin analysis for nuclear facilities. Starting in 2011, Dr. Kammerer was a member of the NRC's seismic technical team developing post-Fukushima response and re-evaluation guidance. From 2012 to 2013, she was also the NRC's technical lead for a special program conducting Seismic Walkdowns of all 104 operating US nuclear plants in response to the Fukushima Daiichi accident. Dr. Kammerer is active internationally and has chaired IAEA Working Groups on seismic re-evaluation of operating reactors, tsunami, and seismic isolation. She holds three degrees from UC Berkeley, including a PhD in geotechnical engineering with minors in strong motion seismology and structural engineering.

**Monday, April 22nd, 4:00-5:00pm  
1310 Yeh Student Center**