



# Probabilistic Risk Assessment

**Engineering Planning and Management, Inc. (EPM) has extensive Probabilistic Risk Assessment (PRA) expertise and experience focused on nuclear technologies. Our staff includes engineers who have worked with PRA methods and techniques for more than 30 years. EPM analysts can employ the best combination of Risk Analysis tools to apply to solving specific problems.**

## *PRA Facility & System Modeling*

EPM expertise includes PRA analysts with extensive experience in all phases of PRA analysis. Our PRA analysts have applied experience in both BWR and PWR commercial nuclear power plants. Our staff also has utility and plant experience that includes Plant Engineering, Safety Analysis, Licensing and Quality Assurance. Our PRA capabilities include all facets of PRA engineering, including:

- Initiating Event Analysis
- Systems Analysis
- Event Tree / Fault Tree Modeling (CAFTA, FRANX)
- Failure Data Analysis
- Human Reliability Analysis (HRA)
- Risk Quantification
- Uncertainty and Sensitivity Analysis
- Level 2 PRA
- Fire PRA
- Shutdown PRA
- Seismic PRA

## *PRA Application Support*

EPM's PRA team has real-world, hands-on experience supporting the following operations and risk analysis applications:

- Missed Surveillance Risk Evaluations
- Mitigating Systems Performance Index (MSPI) bases document development
- Maintenance Rule Scope, Risk Significance determination, and SSC risk ranking
- Maintenance Rule (a)(4) model (EOOS) development, evaluations, and end user training
- Notices of Enforcement Discretion (NOED)
- Plant Security Target Set development
- Risk-Informed Licensing Application preparation
- Severe Accident Management Alternatives (SAMA) development
- Significance Determination Process (SDP) for online and shutdown events
- Support for all aspects of the reactor oversight process (ROP) as applied by the NRC

### RISK SERVICES

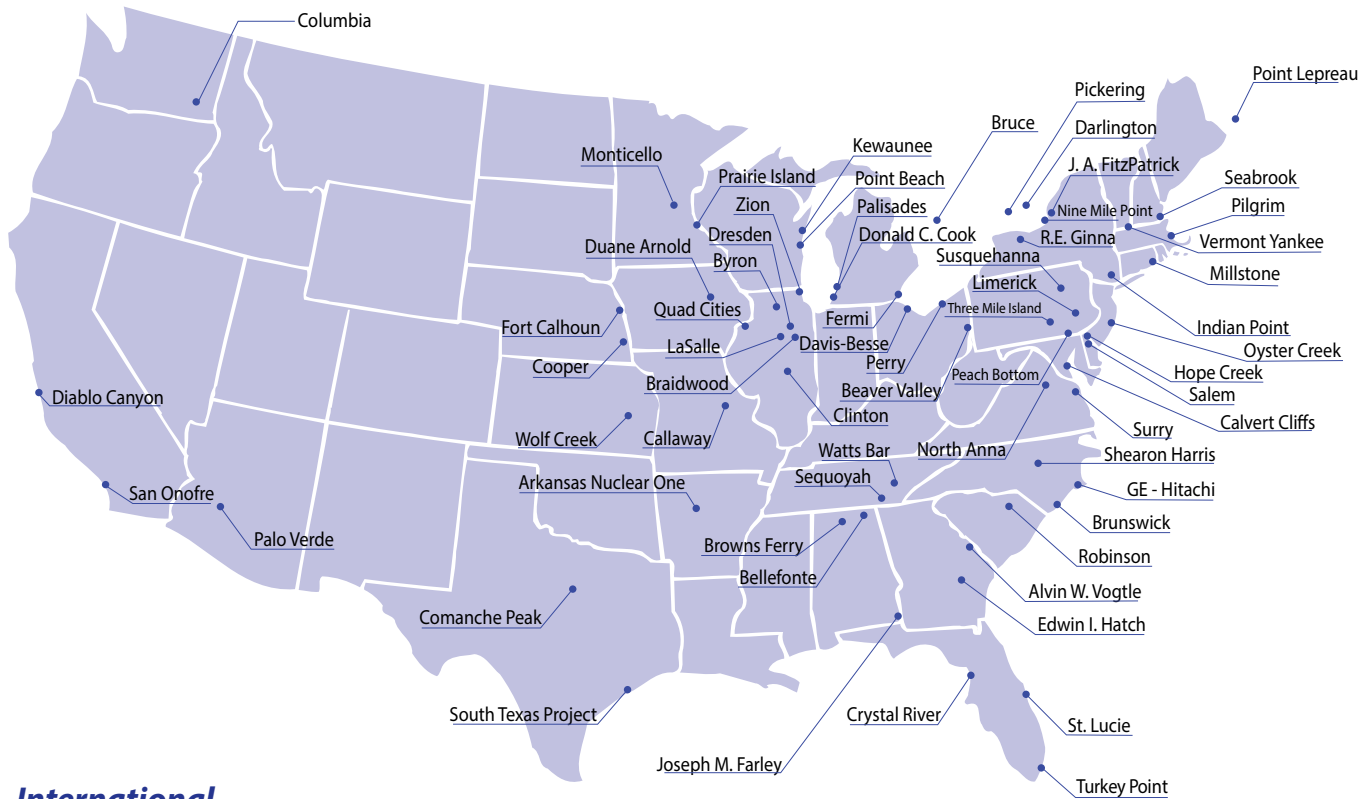
- + Probabilistic Risk Assessment Services
- + Fire PRA/Seismic PRA
  - Cafta
- + Fire Modeling
  - FDS
  - CFAST
- + Human Reliability Analysis
  - EPRI HRA Calculator
- + Training



In addition to nuclear and fossil utilities, EPM's clients include architect/engineering firms, federal agencies, educational institutions, and other consulting firms as well as a number of commercial companies.

### **Domestic Nuclear Power Plants**

EPM has provided support to over eighty percent of utilities in the United States and ninety percent of utilities in Canada.



### **International**

Assisted nuclear plants in:

- Armenia
- Canada
- Korea
- Japan
- Russia
- Spain
- Ukraine
- United Kingdom

Assisted Nuclear Regulatory Agencies in:

- Armenia
- Canada
- Russia
- Ukraine
- United States
- International Atomic Energy Agency (IAEA)

For more information contact Bruce Morgen, P.E., Director of PRA and Risk Informed Initiatives, [bxm@epm-inc.com](mailto:bxm@epm-inc.com) at:

