

# External Flood Protection Design/Licensing Management Best Practices Guide

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# Topics

- EPRI Nuclear Maintenance Applications Center reports
- Technical Advisory Group Membership
- Best Practices Guide Overview

# NMAC Reports

- Flood Protection Systems Guide - [3002005423](#)
  - Published in 2015
  - Flood-protection components and the design, testing, inspection, and maintenance of these components
- External Flood Protection Design/License Basis Management Best Practices Guide - [3002010620](#)
  - Published in 2017
  - Practices for owner/operators to assure the day-to-day operation of the plant complies with the design basis and licensing basis with respect to protection of safety functions from external flooding threats.

# Technical Advisory Group

Don Bentley	Entergy Operations, Inc.
Joshua Brewer	Duke Energy Carolinas
Karen Carboni	Tennessee Valley Authority
Raymond George	INPO
Jeff Greene	EPRI
Scott Groesbeck	DP Engineering, Ltd. Co.
Sam Harvey	EPRI
Chris Johnson	Entergy Operations, Inc.
John Johnson	Southern Nuclear Operating Co.
Bradley Lanka	Exelon Generation, LLC
Matthew Mairinger	Ontario Power Generation, Inc.

Yasuyuki Moriyama	Chubu Electric Power Co., Inc.
Keita Naito	The Chugoku Electric Power Co., Inc.
Jeffrey Peacock	Exelon Corporation
Frances Pimentel	Nuclear Energy Institute
Swadesh Ramdeen	NextEra Energy, Inc.
Richard Rohrer	Xcel Energy Services, Inc.
Vincent Rougier	Electricite de France S.A.
Denis Shumaker	PSEG Nuclear, LLC
Mark Woodby	Entergy Nuclear Operations, Inc.
Paul Young	Dominion Generation, Inc.
David Ziebell	EPRI

# Best Practices Guide – Section Outlines

- Purpose, Background, Approach and Implementation
- Design Documentation
  - Documenting the design basis external flood event
  - Documenting the flood protection features credited in the design
- Organizational and Procedural Methods
  - Roles and responsibilities
  - Monitoring and responding
- Inspections, Maintenance, and Demonstration of Manual Actions
  - Best practices for inspection for passive flood protection features
  - Best practices for maintenance for active flood protection features
  - Demonstration of manual action effectiveness for flood protection features that require manual action
  - Lessons learned from NEI 12-07 walkdowns



# Best Practices Guide – Section Outlines continued

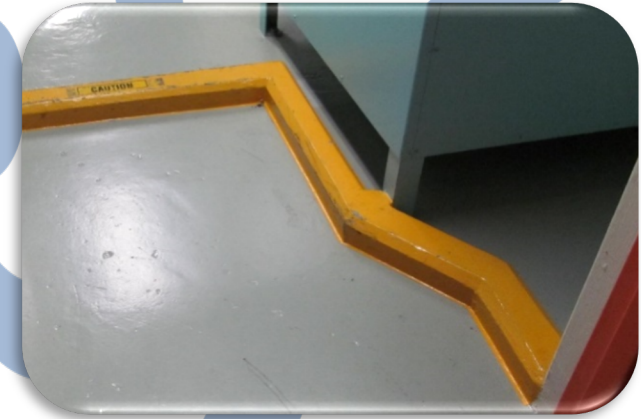
- Modifications and Work Control
  - Modification impacts
  - Work control
  - Compensatory measures
- Response to Imminent Flooding
  - Severe weather monitoring
  - Proceduralizing external flooding response
  - Recommended elements for external flooding response procedures
- Training and Communication
  - Skills and knowledge
  - Communication





# Best Practices Guide – Section Outlines continued

- Management Oversight and Effectiveness Measurements
  - Assessing readiness
  - Assessing capability
  - Corrective action program trending
- References
- Appendix A: General Approach to Development of External Flooding Design and Licensing Bases
- Appendix B: External Flooding Survey Response Initial Analysis
- Appendix C: External Flood Protection Features List Examples
- Appendix D: Reasonable Simulation Timeline





# Together...Shaping the Future of Electricity

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