



# *Generic Severe Accident Management Guidance*

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# Introduction

- Both Owners Groups are heavily invested in assisting their members with the implementation of many of the initiatives resulting from the event at Fukushima Daiichi.
  - Emergency Operating Procedures (EOPs)
  - FLEX Support Guidelines
  - Severe Accident Management Guidelines
- Maintaining close coordination between the two Owners Groups, NEI, and EPRI.

# EPRI TBR Update

- Both Owners Groups participated in the most recent update of the EPRI Technical Basis Report (TBR).
  - Ensured broad understanding of the operating experience and lessons learned.
  - Resulted in consistent considerations and approaches for updating Severe Accident guidance.
- Recognize that industry will continue to gain knowledge from the Fukushima accident and are committed to incorporate this knowledge into future materials.

# PWROG SAMG Update

- Phase 1 (completed January 2013)
  - Revised severe accident management guidance for each NSSS technology to address near-term lessons learned (Westinghouse, CE and B&W)
  - Based on updated EPRI TBR, the changes included new/revised guidance for:
    - Spent Fuel Pool cooling
    - Ex-containment hydrogen
    - Use of raw water
    - Containment leak behavior
  - Instrumentation:
    - SAMGs contain guidance to validate instrumentation indications using available alternative information

# PWROG SAMG Update

- Phase 2 (in progress)
  - Develop a common PWR Severe Accident Management Guideline (SAMG) document
  - Address lesson learned from implementation of original SAMG programs
  - Incorporate best practices and enhancements from individual NSSS SAMGs
  - Continue monitoring of Fukushima lessons learned
  - All US PWR sites have committed to implement the Phase 2 update:
    - Facilitates continuous improvement and future updates through the use a single generic SAMG for all PWRs (similar to current BWR approach)

# PWROG SAMG Update

## Schedule

Project Deliverables	Schedule
NSSS-Specific SAMG Update	January 2013
PWROG Generic SAMG, Revision 0a (pre-validation)	February 2015
PWROG Generic SAMG Validation Report	September 2015
PWROG Generic SAMG, Revision 0 (post-validation)	January 2016
PWROG SAMG Generic Training Material	October 2016
PWROG Generic SAMG Drill Scenario Templates	July 2016
Site-specific Generic SAMG Implementation	July 2018
SAMG Maintenance	Continuing

# BWROG EPG/SAG Update

- Issued Feb 2013 incorporated early insights:
  - Preservation of steam-driven reactor injection systems by limiting depressurization if needed for adequate core cooling
  - Anticipatory containment venting to remove decay heat and reduce suppression pool temperature as suction source
  - Integration of portable equipment in EOP and SAMG guideline steps
  - SAMG changes reflect a reduced emphasis on containment flooding and guidance to preserve the wet well vent as appropriate
  - Instrumentation:
    - SAGs contain guidance to validate instrumentation indications using available alternative information

# BWROG EPG/SAG Ongoing Actions

- Resolution of EPG/SAG Revision 3 implementation topics identified by member utilities through the Emergency Procedure Committee
- Severe Accident Water Addition/Severe Accident Water Management (SAWA/SAWM) strategies being incorporated into the SAGs
- Planned issuance EPG/SAG Rev 4 anticipated in 2017

# BWROG EPG/SAG

## Schedule

Project Deliverables	Schedule
Critique Fukushima Accident and make interim EOP/SAG Changes	2012
Formally issue Rev 3 EOP/SAG and conducted international training	2013
Address implementation issues from Rev 3 and FLEX guidance with approved interim changes	2014
Order 109 and other FLEX implementation lessons approved interim actions	2015
Issuance of Rev 4, MS Rule active driving 3-4year implementation timeline	Anticipated 2017
US BWRs implement Rev 4	~2021

# Closing Remarks

- Both Owners Groups working closely in the area of Onsite Emergency Response Procedures/SAMGs
  - Coordinating with NEI and EPRI
  - Incorporating insights from each others SAMG validation exercises
- OG activities have supported the MBDBE Rulemaking (including guidance documents)
  - Will provide safety benefit without undue burden.
- Both Owners Groups have strong ownership of the SAG/SAMGs and are committed to a rigorous process in their development as well as continuous improvement.

