



BWROG EPG/SAG Revision 3 Updates

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NRC Public Meeting
Emergency Response
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Committee Participation

BWROG EPC committee has full participation in 2012 from US utilities and from several international participants

All US utilities have had key/essential roles in improving the BWROG EPG/SAGs

International members Japan, Switzerland, Spain and Mexico have played key roles in advancing the EPG/SAGs

EPG/SAG Rev 3 Improvements

Fukushima Issues-Changes to EPGs-prevention

Spent Fuel Pool Control in both EPGs &SAGs

Station Blackout Enhancements in EPGs –

Preserve steam driven systems if required to maintain adequate core cooling even when emergency depressurization required by containment

Vent containment if required to restore and maintain adequate core cooling or limit offsite dose

EPG/SAG Rev 3 Improvements (cont.)

Fukushima Issues-Changes to SAGs- Mitigation
Improved Decision Loop
Improved SAG Strategies for non-LOCA
Clarify Minimum Debris Retention Injection Rate
Secondary Containment Hydrogen Control in SAG
Technical Support Guidelines

EPG/SAG Rev 3 - Schedule

- BWROG EPG/SAG Rev 3 completed and issued draft in early December 2012
- Full EPC Review December
- Comments incorporated and committee approved EPG/SAG Rev 3 in late January 2013

EPG/SAG Rev 3 – Schedule (Cont.)

- US utilities are implementing EPG/SAG Rev 3; expected completion is late 2015 early 2016.
- Implementation is driven by training schedule
- The BWROG is providing a generic Emergency Management Guideline (EMG) for integration of various procedures. (EMG is currently in use at Duane Arnold)

EPG/SAG Rev 3 Implementation

Symptomatic EOPs and SAMGs are integrated by the criteria that delineates when you transfer from one to the other

EDMG equipment and capabilities are incorporated into the Rev 3 EOPs/SAMGs

BWROG products under development (EMG) will further integrate the procedures

EPG/SAG Rev 3 Implementation

(cont.)

- When in the EOPs, command and control (C&C) remains in the Main Control Room (MCR)
- Command and control when in the SAMGs is either maintained in MCR or transferred to the Technical Support Center (TSC)
- If the MCR is not available, C&C is addressed by the EDMG until relieved by the ERO

EPG/SAG Implementation Rev 3

(Cont.)

EPC will be meeting quarterly and discussing issues identified during implementation of Rev 3

Implementation:

- EPG/SAG Rev 4 will include the resolution of identified Rev 3 implementation issues
- EPG/SAG Rev 4 will include lessons learned and best practices from Rev 3 implementation

EPG/SAG Rev 3 - US Training & International Workshops

US Based EPG/SAG Training held February 18-22, 2013 in Scottsdale, AZ

- Near 100 participants (All US Utilities, individuals from Japan, Mexico, Spain, INPO, US DOE and NRC)

European workshop being held during week of April 15, 2013 near KKL (Bad Zurzach, CH)

Two Asian Workshops planned: October 15 to 25, 2013 Tokyo; and Mid-November Taiwan

Workshop planned for CFE in mid September 2013
NRC Training requested training workshop

EPG/SAG Rev 3 - US Training & International Workshops (cont.)

US EPG/SAG Rev 3 training focused on changes between what is currently implemented and Rev 3, US regulatory insights, and the Technical Support Guidelines (TSGs)

International Workshops provide a more in-depth synopsis of the EPG/SAG Rev 3 basis with consideration given to differences in regulatory environments

ABWR EPG/SAGs

International Participants (Japan and Taiwan) have need for ABWR EPG/SAGs based on Rev 3:

- ABWRs are under construction/or planned for operation in Japan & Taiwan; 6 new units planned for UK; 1 planned for Lithuania

Committee developed a project plan to incorporate ABWR specific Rev 3 items into the EPG/SAGs:

- TEPCO is interested in leading this effort by supplying the sub committee chair

International Influences

The BWROG international members' EPG/SAGs are influenced by decisions made by the IAEA:

- IAEA review of BWR specific EPG/SAGs (Mexico and Nordic) using PWR guidance was not helpful

The IAEA is reviewing their EPG/SAG guidance for PWRs and updating it for BWRs:

- Roy Harter from Duane Arnold is representing the BWROG interests on the IAEA committee
- The BWROG EPC may review the updates to IAEA guidance as part of the peer review process

Committee Future Activities

EPG/SAG Rev 4 needed (~ 3 to 5 year implementation date)

Based on events associated with Hurricane Sandy, Shutdown EPG/SAGs are warranted:

- Subcommittee Lead – possibly led by European contingent (suggested by Spain to meet their regulators request)

ABWR and Shutdown EPG/SAGs would be part of Rev 4

- May be issued as interim draft prior to completion of Rev 4 of the EPG/SAGs

Committee Future Activities (cont.)

EPG/SAG Rev 3 Best Practices/Benchmarking:

- Multiple workshops with a crew composed of one or two SROs from each utility on full scope severe accident simulator using EPG/SAG Rev 3 to identify best practices
- BWR full scope severe accident simulators exist at Monticello, Laguna Verde (Mexico) and Technatom (Spain) for SAG Crew training
- US DOE is interested in cost sharing on severe accident simulators for SAGs (DOE possible support for simulator time and human performance best practices, industry to provide crew)

Committee Future Activities (cont.)

Three committee meetings planned for 2013;
Jackson Hole May 2013; Lake Tahoe Mid- August
(1/2 day PRA committee); Winter TBD

Joint PWROG/BWROG EP subcommittee meetings
during committee meetings to identify best practices

Questions ?