

# Severe Accident Management Guidelines

## Challenge

Each site in the Pressurized Water Reactor (PWR) fleet has made a docketed commitment to the Nuclear Regulatory Commission (NRC) to implement and maintain the PWR Owner's Group (PWROG) Severe Accident Management Guidelines (SAMGs). The PWROG SAMG was issued in February 2016, and each site must have it implemented within three years or two refueling cycles (whichever is greater). The SAMG is being included in the Reactor Oversight Process (ROP).

The new enhanced PWROG SAMG, issued as PWROG-15015-P, consolidates the best practices of the NSSS-specific SAMG and is now available for generic application to the U.S. PWR fleet. Implementing the SAMG will require modifying the generic guidelines to create site-specific guidelines, development of setpoints, creation of Computational Aids (CAs), validation of the completed SAMG, and training, which may require site-specific development. Each stage of implementation requires specific expertise. Therefore, full implementation of the SAMGs requires a team of individuals with differing backgrounds.

## Solution

As a vendor member of the PWROG and having been significantly involved in the creation of the PWROG SAMG (AREVA NP is listed as an author), we have the knowledge and expertise needed to either implement the SAMGs for a site, or to provide consulting services to guide the plant-specific application and ensure the most efficient and cost-effective implementation. AREVA NP can help with all tasks involved in implementation of the new enhanced SAMG. Our team can perform the guideline writing, setpoint creation, computational aid creation, technical support guidelines and calculations, and training of site-personnel. For validation, AREVA NP can help the site convert the generic templates provided by the PWROG to site-specific templates. Further, we can help facilitate the validation by providing validation controllers.



## Customer Benefits:

- AREVA NP provided significant contribution to the PWROG SAMG.
  - Worked with Westinghouse to generate the SAMG.
  - Authored or reviewed almost every section of the SAMG.
- AREVA NP can minimize the learning curve by using the expertise and knowledge developed during creation of the SAMG.
  - Our engineers who helped develop the SAMG will either be involved with authoring site-specific SAMGs or will be providing consultation during the implementation process.
  - The generic SAMG includes guidance for Westinghouse, Combustion Engineering, and Babcock & Wilcox Nuclear Steam Supply System designs. AREVA NP is well suited to recognize and remove all non-applicable guidance minimizing the effort needed to implement the site-specific guideline.
- AREVA NP can take prompt action to ensure the site's issues and concerns are addressed by the PWROG SAMG maintenance program.



## Technical Information

If your utility opts to self-perform the SAMG, AREVA NP can also customize support to meet your needs. We can provide on-demand subject matter experts to help with questions and problems encountered during implementation. In addition, if the site would like to manage the project themselves, we can provide staff-augmentation that would be under site management. Your staff would have access to our personnel with in-depth knowledge of the SAMG, thus giving you a prompt resource for technical issues.

## Elimination of Learning Curve

Due to involvement in the creation of the PWROG SAMG, AREVA NP has the knowledge and expertise to efficiently create site-specific SAMGs. A utility can avoid a significant portion of learning costs associated with becoming familiar with the generic product by having AREVA NP develop their site-specific guideline. Your staff (or other third-party) will need to study individual guideline steps to determine if they apply to your site, our engineers involved in the creation of the SAMG already possess this knowledge — eliminating the learning curve.

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## Reduced Implementation Time-Frame

In addition, our team of engineers has operations experience — from both Once-through and U-tube style Nuclear Steam Supply Systems. The operations background provides an integrated knowledge of plant systems that allows our personnel to ensure all mitigation strategies are included. Discussions with the industry reveal that many sites anticipate it will take one man-year to complete the guideline writing and additional effort for setpoint generation. If performed by AREVA NP, this could be reduced to approximately eight months. This reduction in effort can accelerate a site's implementation schedule and lower cost.

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