Thermal Hydraulic Analyses

EPM provides efficient and cost effective solutions for nuclear regulatory and risk related thermal-hydraulic analysis problems

Background

EPM provides thermal-hydraulic analyses for both pressurized water and boiling water reactor systems to support nuclear probabilistic risk analyses (PRA) and nuclear risk applications. EPM's staff has experience modeling plant transients, various loss of coolant accidents, and multiple spurious failures using the Modular Accident Analysis Program (MAAP) code. EPM has also applied the MAAP code to support analysis for licensing basis applications such as Appendix R and NFPA 805 Safe Shutdown, including the upgrade of documentation for the necessary portions of the plant MAAP models to 10CFR50 Appendix B standards. EPM can also assist clients in creating new plant MAAP models as well as updating existing models.

EPMs experience in thermal hydraulic analyses has been practically applied to:

- NFPA 805 Fire PRA NRC Submittals
- PRA success criteria development and validation
- PRA Human Reliability Analysis (HRA) timing
- Utility support for NRC violations associated with the Significance Determination Process (SDP)PRA model enhancements and adaptations to address findings
- Nuclear Regulatory Commission (NRC) Significance Determination Process (SDP) violation support and consultation

Why EPM?

EPM is a multi-discipline engineering company that provides services in fire safe shutdown analysis, fire protection, PRA/PSA, risk management and engineering and software solutions to clients throughout the world. We provide assistance in addressing issues related to regulatory compliance, engineering programs, licensing, and configuration management for operating nuclear power plants, as well restart and new and decommissioning plants.

EPM provides a full spectrum of services in support of utility engineering programs such as fire safe shutdown analysis, fire hazards analysis, Design basis development and certification, Environmental Qualification (EQ), Component Classification (Q-list), Maintenance rule, etc.

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EPM Risk Services Division offers seasoned experts in PRA (Internal event, external event, fire PRA, seismic PRA), System Engineering, Fire Modelling, Thermal-Hydraulic and Human Reliability Analysis. Together with EPM's Fire Protection Engineering, Safety and Systems Analysis, Software and Technology Solution teams, we offer a one stop shop for all aspects of Risk Informed Regulation and other engineering programs.

EPMs' staff consists of highly experienced utility and regulatory personnel that can offer unique perspective and expert solutions to challenging Significance Determination Process needs.

- Flexible, timely, responsive and cost effective solutions tailored to client's scheduling and budgetary needs
- Practical utility and regulatory experience
- Client value driven perspective
- Diverse experienced staff working together as a seamless team to address the client's unique challenges

Testimonials

"EPM has consistently and earnestly listened to my concerns and questions with the desire to 'Get it Right'. Questions are answered promptly and updates to software are provided to address any issues. EPM displays great communication skills; listens and explains issues with the purpose of reaching an understanding and final resolution. EPM keeps me informed of outstanding items, and always provides a point of contact for any questions I may have." – ***Supplier Observation - Electrical Design Engineering/Exelon Project Lead - Limerick Generating Station - September 2016***

"I wanted to let you know how impressed I was with the level of talent, support, and professionalism of your people. I was able to meet several of them during the Point Beach audit, listen to them speak to the NRC, and witness their level of knowledge during plant walk downs. I couldn't have been more satisfied with their performance. Their hard work made this an extremely successful audit. I am proud to call them members of our Point Beach team. If I can provide recommendations on their efforts in the future, please don't hesitate to contact me." – ***Programs Engineering Manager - Point Beach Nuclear Plant - June 2014***

"The purpose of this note is to express my appreciation for the support provided by EPM to AEP in response to the multiple issues associated with the degraded Auxiliary Building pre-action suppression systems and NRC Fire Protection Triennial Inspection June 10 - 29, 2013. Specific examples of strong performance included prompt dispatch of field engineers to assist in developing and completing a test plan to address our degraded suppression systems, development of a hydraulic model to address the ability of a single fire pump to meet the demand of our worst case suppression systems and completing technical evaluations and fire modeling necessary to support the Significant Determination Process (SDP). It is my understanding EPM was able to provide this requested technical expertise to meet our challenges while simultaneously completing two peer station NFPA 805 License Amendment Requests. This performance is noteworthy. Please share this information with your staff and once again thank you." ***– Engineering VP - AEP/DC Cook - June 2013***

For more information contact Bruce Morgen, P.E., Director PRA and Risk Informed Initiatives, bxm@epm-inc.com

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