Swedish Nuclear Power Plant Gets Severe Accident Simulation Modeling Tool PSA-HD™

Kärnkraftsäkerhet och Utbildning’s (KSU) Ringhals Unit 2 (R2) PWR-type reactor is the first and only Swedish NPP simulator that can be used for severe accident training.

Long-time GSE customer, KSU, decided to upgrade their GSE RELAP5-HD™ and JTopmeret™ models, as well as their SIMULATE-3R models, and implement PSA-HD to provide a platform suitable for preliminary safety analysis. R2 operators will now be able to explore different severe accident scenarios and see the consequences of their actions during severe accident mitigation. These scenarios are dependent on the actions of the operators and not on a pre-defined scenario.

GSE upgraded the reactor models and increased the fidelity of these models to account for each single boundary using high-definition server technology which enables the simulator to account for the 3D phenomenon both in the reactor pressure vessel and steam generators. PSA-HD was implemented by fully integrating all boundaries between the simulator and the PSA-HD models.

Similar RELAP5-HD™ and SIMULATE-3R reactor model upgrades were completed by GSE on KSU’s Ringhals 1 and Oskarshamn 1 in 2011 and 2012 respectively. GSE delivered the original Ringhals 2 simulation platform, GSE’s SimExec™, and BOP models in 1996.

“The delivery, integration and support from GSE has been very professional, competent and exceptionally good throughout the whole project. Testing has been extensive and results for the new reactor models are good. The upgraded Ringhals 2 simulator is now being used for training of the R2-operators.”

OVE LINDGREN
Project Leader
KSU
About GSE Systems

GSE Systems, Inc. is a world leader in real-time high-fidelity simulation, providing a wide range of simulation, training and engineering solutions to the power and process industries. Its comprehensive and modular solutions help customers achieve performance excellence in design, training and operations. GSE’s products and services are tailored to meet specific client requirements such as scope, budget and timeline. The Company has over four decades of experience, more than 1,100 installations, and hundreds of customers in over 50 countries spanning the globe.

Information about GSE Systems is available at [www.gses.com](http://www.gses.com).

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