In March 2009, GSE Systems was awarded a contract by Slovenske Elektrarne (SE) to build a modern high-fidelity, full-scope simulator for units 3 and 4 of the company’s Mochovce nuclear power plant. Currently under construction, the Mochovce plant is a VVER-440, model 213 with six coolant loops, each with horizontal steam generators.

As part of plant commissioning, SE needed a simulator that can perform verification and validation of the plant’s operational and emergency procedures, verification and testing of the digital control system (DCS), as well as train the new operators on the main unit. By December 2013, GSE had built the MO34 simulator to serve these functions and delivered it successfully according to schedule with total customer satisfaction.

The MO34 proved to be a complex and unique simulator, mainly because it can be operated by either the DCS or by back-up control panels (BUP). Since the plant is still under construction, certain challenges were posed, such as the ability to build the simulator parallel with the plant and the availability of the DCS database. Despite these challenges, and with strong project management talent and effective processes, GSE was able to deliver the simulator it had promised.

The MO34 full-scope simulator was developed with GSE’s high-fidelity software tools and interface software based on its Java Application & Development Environment (JADE). These software tools provide SE with user-friendly, easy maintenance, accurate results and proper response during all modes of operation.

As of April 1, the first four simulator training lecturers for the future operations of units 3 and 4 were issued licenses by the Slovak nuclear regulator, UJD. SE has already used the simulator to verify emergency operational procedures and will soon test the usability of operational documentation. With the completion of the MO34 simulator project, GSE has successfully helped the Mochovce plant reach a major milestone towards safe operations of units 3 and 4.

Case Study

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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.

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