Selling diesel generators is a good business to be in these days. Whether installed for plant back-up power, system restoration, or for getting fast MWs to a renewables leveraged grid, operators and engineers are challenged to understand the intricacies of yet another type of generator. Or maybe we should say “generators” as they are now placed in multiples.

GSE has extensive experience simulating diesel generators with models originally developed for nuclear power plant projects. The scope included detailed engine, controls, and electrical models enabling comprehensive training for critical safety operations. For fossil applications, we have often included JElectric™ models which enable effective training on electrical scenarios associated with bringing diesel power to plant equipment busses under black start conditions.

A recently completed project included five diesels to simulate and train black start activities added to an existing CCGT site. While operations training was a key project objective, the engineering team was able to exercise the simulator during factory testing to gain the additional benefit of “virtual commissioning” of the electrical switching, relays, and synchronization. The JElectric and JControl controls emulation were integrated with the GE Virtual Mark Vle system on the existing CCGT simulator. This enabled the various interactions between multiple diesels and the gas turbines to be evaluated. The result was valuable adjustments to controls and operating strategies made before actual commissioning.
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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