



Nuclear Power Plant Emergency Generator

MPR Conducts Large Diesel Engine Extended No-Load Testing to Confirm Operability

CHALLENGE

MPR received a request from a nuclear power plant to conduct a full scale test to demonstrate that its emergency diesel generator (EDG) was capable of operating for an extended period of time at no load. The original equipment manufacturer (OEM) had stated that it was unacceptable to operate its engines for long periods of time with little or no load on the engine generator set. Since the EDG is not required to produce rated power during most accident conditions, the USNRC was concerned that the engine would not support its long-term plant safety mission.

SOLUTION

MPR developed a project plan to assist the plant in addressing the regulator's concern. MPR then took the responsibility to fly the plant's 5,000 bhp, 20-ton spare engine back to the factory in Europe along with 800 gallons of engine lubricating oil. MPR supervised the engine disassembly and inspection before testing. Following installation on a factory test stand, the engine was operated continuously at no load for one week (168 hours). The engine, connected to a water brake, was then loaded to its 100% rating within one minute and then run for two hours without incident. The engine was disassembled following the testing and re-inspected for signs of wear or damage and none was found. Following the test, MPR arranged for the return shipment of the engine to the nuclear power plant.

RESULTS

MPR prepared a final report describing the details of the shipping, disassembly, inspection, testing and re-inspection of the engine. The project was a complete success for the nuclear power plant in that it resolved the regulator's concern and no findings were issued.

