

Case Study: Rolls-Royce Uses VXIbus Boards to Test Shut-Down Sequencers for French Nuclear Power Plants

Submitted by [Bustec](#)

Company: Rolls-Royce

Industry: Nuclear Power

Challenge: Designing a system to continuously test and evaluate the automatic shut-down sequencers in all 130 0MW nuclear power plant reactors. As these sequencers are fundamental for the safety of the plants, the equipment used must be able to simulate all inputs and outputs of a full power plant.

Solution: Using a VXIbus-based solution with Bustec products to achieve a high level of analog accuracy and bandwidth for acute measurements and real-time simulations.

Products

- ProDAQ 3020 USB 2.0 VXIbus Slot-0 Interface
- ProDAQ 3120 Standard Motherboard Module
- ProDAQ 3410 Input-Protected ADC Function Card
- ProDAQ 3510 16-Channel DAC Function Card
- ProDAQ 3550 2-Channel, Fast DAC Arbitrary Waveform Generator
- ProDAQ 3610 48-Channel DIO Function Card

EDF, the world's leading nuclear power utility, operates a French nuclear power plant fleet consisting of 58 reactors spread over 19 different sites. Rolls-Royce (here formerly DSS) was chosen by EDF for their proven track record in the nuclear power industry. Rolls-Royce decided to use Bustec hardware for several reasons. Rolls-Royce found that the real-time performance of Bustec boards is unmatched by any other boards in the industry, as Bustec designed all boards for high throughput and low-response latency. In addition, Rolls-Royce could take advantage of the analog accuracy of Bustec analog input and output boards.

Bustec is the only company providing equipment that can accurately simulate thermocouples with the accuracy required by Rolls-Royce.