

#CASE SUMMARY: AEROSPACE TEST STAND RETROFIT

Introduction and Problem

GE Aerospace needed to replace a vintage ABB DC drive on a spin testing machine designed for testing gas turbine power stages. The original design was a BBC Veritron DC drive from the early 1980s. The ABB DCS800 was the legacy of the unique Veritron DC drive design, as BBC was part of the original merger with ASEA to create ABB in 1989. The application had some particular design challenges, including:

- No access to the programmable logic controller (PLC), which meant the new DCS800 needed to mimic the original Veritron in performance and control completely
- The drive was 600HP running a customized DC motor with a maximum speed of 3,600 rpm. However the machine had several speed-up belt systems turning the turbine section in excess of 10,000 rpm
- The acceleration and deceleration was .01 seconds
- Mirror the adjustable torque limit in both directions of change
- Desensitize the internal speed controller enough to allow the original motion controller to operate without interference from the drive tuning



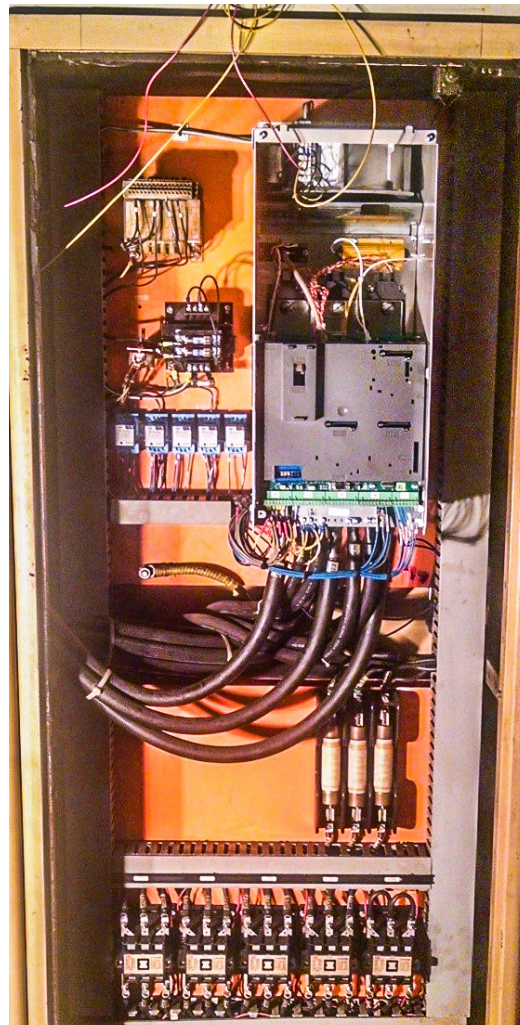
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The Solution

ABB, a premier global manufacturer, recommended B&D Industrial as the ABB Value Provider (VPP) to do this job based on our knowledge and experience. Although, the test engineer had some reservations with us as we are a distributor and not actual ABB employees. Note – we get this a lot, and we respond that we test ABB's new products and firmware. The ABB drive developers value our opinion based on experience with AC and DC drives that few others have. The perception that a factory employee somehow has more knowledge is just a perception.

Atlanta-based Cleveland Electric worked with B&D Industrial's Applications Engineering Group on the retrofit based on reengineered and redesigned schematics, which we created before the start of the job. The demolition and reinstallation required only two days without any issues or concerns. From start to finish, the job completed in 4 days solid days. All of the customer's engineers were pleased with the smooth experience and the practical solution. B&D and ABB met the performance requirements and, to date has retrofitted three of the designs.



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