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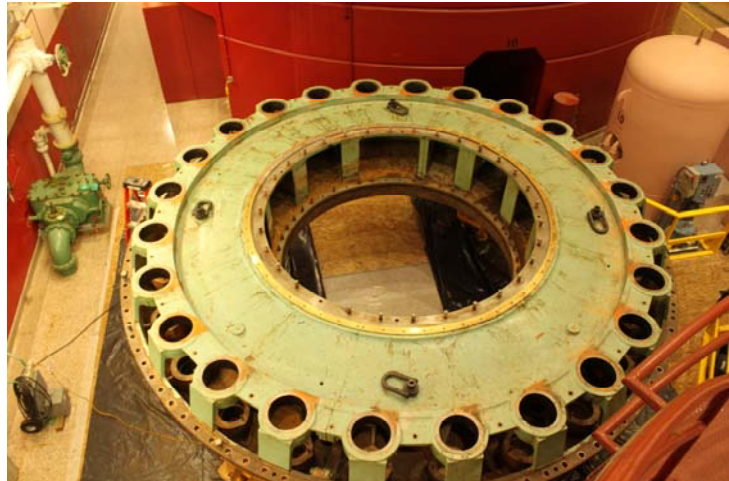
Precision Measurement Solutions for Manufacturers

Mini Case Study: Hydro-Electric Dam

Project: Measure head cover for turbine
Location: Chief Joseph Dam – Bridgeport, WA

Alstom Hydro required measurement of the rotor-assembly head cover. The head cover had been removed and was supported on cribbing. The head cover was over 20ft diameter with 24 hole-positions. There were internal and external bores of varying sizes that required measurement at various angles and on multiple planes. Careful planning was required to determine the best positions for the laser tracker.

The project ultimately required taking laser tracker measurements from five positions to cover the entire scope of work: the top, the bottom, and three different side positions. With the use of multiple control points (monuments) located around the periphery of the head cover, we were able to move the laser tracker as necessary and measure over 365 points and features. The entire inspection was completed in 2 days.



Rotor Assembly Head Cover



Faro laser tracker mounted horizontally

The Faro laser tracker was also used to measure the bottom ring located inside the stator / shaft area. The laser tracker was mounted above the bottom ring horizontally to maximize the measuring envelope. The Faro horizontal attachment was used to provide a counterbalance for the laser tracker allowing it to hang safely out in space. The computer was located at the bottom ring and all the readings were taken using the Faro laser tracker wireless network feature.

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Faro laser tracker viewed from the bottom ring

The data was exported into an MS Excel spreadsheet from the report generated by the Faro software, and the spreadsheet was used to populate the detailed site record sheets specified by the Alstom Hydro engineers.