ABB Rapid Response Saves Chemical Refinery from Hurricane Harvey’s Clutches

After Hurricane Harvey destroyed 53 ABB gas chromatographs at a large Texas refinery, ABB sprang into action, manufacturing and replacing 24 units while repairing 29 others – all within three months.

In August 2017, Hurricane Harvey made landfall on the southern gulf coast of Texas, hammering the area with high winds and torrential rain. As Harvey made its way up the gulf coast toward Houston it stalled, causing record-setting flooding. Some of the hardest-hit areas received over 60 inches (152 cm) of rain over a five day period.

This massive flooding shut down most of the Houston-area’s large chemical and oil refineries, many of which were under feet of water for days. At one such complex, ABB has a large installed base of gas chromatographs including PGC3100, PGC2000, PGC2007, PGC5000 B and C Smart Ovens, as well as the VistaNET and VistaSTAR data management systems. This complex was also a major test site for the new PGC5000 and VistaSTAR product lines.

There are three buildings – Units 1, 2, and 3 – housing gas analyzers on the site. The worst hit, Unit 3, housed 24 PGC3100/PGC2000s and all associated sample panels. All 24 analyzers were under water for three days. The other two buildings had floodwaters rise three to four inches above the bottom of their 29 gas analyzer ovens.

Once the waters receded, ABB field service engineers, accompanied by personnel from the customer, conducted a walkthrough to determine the damage and assess what would be needed to get all 53 gas chromatographs operational. The assessment proved to be quite a challenge as the facility was still lacking reliable, grid-connected power.

The team determined that the 24 PGC3100/PGC2000 chromatographs and their associated sample panels, would have to be completely replaced. The 22 PGC2000s and the seven PGC5000s in the other two buildings were deemed repairable.
Moving fast to get them up and running

To get the facility up and running again, an aggressive timeline was set. The goal was to get Unit 1’s damaged chromatographs up and running by the end of September. With Unit 2 coming back online in late October. Unit 3, which housed the completely demolished analyzers, was slated for a mid-November restart.

ABB’s Lewisburg, West Virginia factory was assigned the critical task of building and delivering 15 analyzers by late October. That delivery would be followed closely by the remaining nine. ABB’s System Integration Unit working out of the Willow Brook Park facility in Houston would handle the demolition and installation of the new units.

While the two facilities began building new analyzers, ABB field service engineers began repairing the remaining 29 chromatographs. With safety a top priority, they began working a 12-day-on, one-day-off rotating schedule. Assisted by customer technicians, ABB Lewisburg support and ABB parts services, the engineers were able to successfully repair and restart 24 damaged analyzers in just five weeks. Many obstacles were overcome, including working with temporary power and a complete lack of application data.

Meanwhile, in Unit 3, demolition began on the damaged analyzers. Once it was complete, technicians from the ABB System Integration Unit installed the new sample panels and chromatographs. The moment permanent power was available, ABB’s field service engineers begin the startup, calibration and commissioning of 24 new ABB gas chromatographs, along with a VistaSTAR server and two VistaNET network gateways. This work was completed in just 19 days.

The accomplishment is remarkable. A total of 53 gas chromatographs were either repaired or replaced in just over two months. Several analyzers that were repaired were over 20 years old, and most application data was unavailable. Engineers had to rely on their experience to apply and configure these systems. This is a huge testament to the can-do spirit embodied by ABB personnel up and down the manufacturing and service chain.