In addition to a library of intuitive and informative KPIs, PlantESP equips users with access to their facility’s raw data. Shown is the Stiction KPI and a trend of the process data for the Chlorinator Temperature loop. As visible on the KPI, PlantESP calculated a very high Likelihood and Amount of Stiction — 83.4% and 5% respectively. In the trend, additional evidence of Stiction is shown in the form of sizeable disruptions that resulted in extended oscillatory behavior.

What was the cause?
Stiction is a mechanical issue that affects control valves and that is common across all sectors of the process industries. Stiction describes the restricted movement of a valve as it responds to incremental changes in position. A valve affected by Stiction frequently moves in such a manner that oscillatory behavior results. In the case of the Chlorinator Temperature loop, Stiction caused sizeable disruptions within the process and several hours were needed to correct for the resulting oscillatory behavior.

How did PlantESP find it?
PlantESP includes a unique Stiction KPI that quantifies both the likelihood and amount of Stiction, and the Stiction KPI is a prominent component in PlantESP’s Oscillating Loop Report. Upon viewing the report engineers zeroed in on the Chlorinator Temperature loop due to the amount of calculated Stiction that was detected. Although the KPI’s trend showcased a large, persistent level of Stiction, engineers wanted a secondary proof point. Clicking on the Process Data immediately confirmed PlantESP’s findings.