

QUALITY DEFECTS

Root Cause

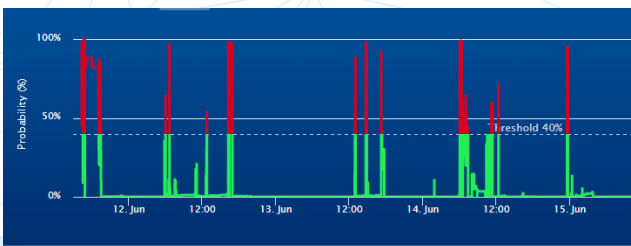


Initial Use Case

Product defects are a costly but common occurrence in the steel industry. Steel process experts understand key variables impacting defects, but it is often difficult to point to a clear cause. Through the combination of EFT's Advanced Analytics platform, EFT's Engineering expertise and Big River Steel's process knowledge, EFT sought to create a tailor-made solution to reduce defects before they occur. EFT initially compiled over 4,000 variables from multiple data sources. Leveraging the analytics platform, through work with Big River Steel, the team reduced the data set to less than 50 key variables. While delivering the solution, our engineers discovered key insights enabling EFT to provide operators real-time guidance for reducing process defects.

Solution

Incorporating the knowledge of Big River Steel's experts, EFT developed dynamic models using key process variables. This gave the facility the ability to predict their quality defects. Through working with the Big River Steel, the models were developed to reflect physical relationships and ensure optimal performance. Based on new knowledge from the model, changes have been made to the controls programming in order to reduce ongoing defects. This real-time model alerts operators of changed conditions that increase the likelihood of defects, highlighting the changes in the variables driving the increase. End results indicate the ability to minimize defects and present opportunities to Big River Steel's facility, equating to significant savings.



"EFT's analytics platform enables our operating and maintenance teams to leverage the power of data science, resulting in significantly improved performance. We view data analytics and machine learning as game-changing solutions that allow us to identify and avoid the root causes of defects."

— Dave Stickler, CEO, Big River Steel