

CASE STUDY

Newmont's fixed plant automation journey with Alarm Sentinel

At a glance

Industry
Mining

Products
Alarm Sentinel, PI Data Archive, SQL, Citect, Yokogawa, Rockwell, Wonderware

PI Instances
12 PI instances, with 8 in future development

Newmont is a leading gold company and a producer of copper, silver, zinc, and lead. Founded in 1921, Newmont has mines across North America, South America, Australia, and Africa, with its corporate headquarters in Denver, Colorado.

As the world's largest gold miner, Newmont has been on a multi-year journey to standardize and maximize the value of its Fixed Plant assets using advanced technologies and automation. Their Fixed Plant ambition is to improve safety, productivity, recovery, and reduced TCO.

Challenge

Due to the expansive and remote locations of Newmont's mines, different control system platforms such as Rockwell, Yokogawa, Citect, and Wonderware have been implemented across sites throughout the years. Alongside aging technology, these different platforms have meant a lack of consistent standards and alarm rationalization - with varying alarm philosophies and definitions of alarms. Newmont was eager to standardize technologies to provide an accurate and comparable global collection and analysis of regular KPI information.

“We have got a lot of Citect, Yokogawa, Rockwell, Wonderware. This system is easy to use on any of those control system platforms”

Dennis Johnson
Process Control Engineer,
Newmont

In 2019 Newmont launched the Operations Support Hub, a centralized process control team to help with site improvements and realize any cross-site improvement opportunities. In 2021 reporting lines for Newmont's Process Control teams were centralized to drive multi-site standardization and accelerate value capture. The Operations Support Hub looked at how each site was calculating and evaluating the control systems and started implementing standardized systems.

Solution

With standardized hardware in place across sites, Newmont was eager to look at the advanced metric tools they could use to provide insights into performance at a site, region, and global level.

Alongside advanced metrics, Newmont had the opportunity to improve on the number of alarms that are presented to the operators.

This would allow them to:

- Identify alarm conditions to proactively resolve (process or mechanical) issues prior to interlock/trip action
- Relieve the operators of nuisance alarms allowing them to focus on process optimization
- Apply a global approach to improving safety
- Benchmark sites across regions and platforms to normalize "per operator" stats
- Create a baseline for the improvement of alarm management systems across all sites, allowing Newmont to prioritize and assign the appropriate number of resources

Alarm Sentinel was the product of choice to support Newmont's alarm management improvement. Alarm Sentinel is not only agnostic and easy to use on any control system platform, but it leverages existing PI infrastructure providing flexibility and easy access to data. The interface of Alarm Sentinel is customizable, easy to manage, and easy to utilize which was critical when implementing across standardized environments.





At one site, chattering alarms have **reduced from 215,000 to 50,000** since implementation and this number is reducing every month.

Results

Alarm Sentinel has meant that Newmont now has access to reliable data from different time zones and dashboards, making it easier to review and analyze alarms.

From a site level, they can now accurately review daily and weekly KPIs and **make real-time improvements**. From a regional perspective, Alarm Sentinel has provided the insights needed to bring the overall alarm numbers down. From a global perspective, Alarm Sentinel has helped to bring site levels into comparison with each other and **provided a holistic view** of where Newmont can remediate any issues.

Nuisance, chattering, and fleeting alarms were apparent after each installation although the team was surprised at how easy it was to address them. At one site, chattering alarms have reduced from 215,000 to 50,000 since implementation and this number is reducing every month.

Looking ahead, Newmont will implement more advanced metrics and by working with its operators, better understand the alarm priorities and alarm rationalization. Regional and global dashboards provide Newmont with the insights needed to address issues and drive decision-making, and they are well on track to success with their Fixed Plant Automation program.

“The control systems feed the information into PI and Alarm Sentinel is pulling information out of PI so there’s a lot of flexibility and access to the data”

Dennis Johnson
Process Control Engineer,
Newmont