Success Story

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Exapilot Automation Cuts Energy Use and Operator Workload at Sumitomo Chemical

SUMITOMO CHEMICAL

Executive Summary

Sumitomo Chemical Co., Ltd. is one of Japan's leading chemical companies. The company began operations in 1913 at a plant in Ehime, which is 700 km west of Tokyo on the island of Shikoku. There it produced calcium super phosphate fertilizer, using sulfur dioxide from a local copper mine. Currently, Sumitomo Chemical operates an electrolytic soda plant in Ehime that annually produces 100,000 tons of chlorine gas, which is used in the production of other chemicals.

The Challenge

Sumitomo Chemical's Ehime plant relied heavily on manual operations for critical processes, placing a significant burden on operators and limiting overall efficiency. Tasks such as flow rate control during filter regeneration required frequent manual intervention—up to 56 adjustments per day—reducing the time available for higher-value activities like planning and optimization.

The plant also faced challenges in maintaining stable process conditions. Variations in sodium chloride solution levels during regeneration required constant monitoring and adjustment, and recovery to normal operating levels could take up to two hours. In addition, startup and shutdown procedures were manual and time-intensive, increasing the risk of variability and inefficiency.

From a systems perspective, traditional automation approaches posed barriers due to their reliance on complex programming and difficult maintenance. The team needed a solution that could simplify configuration, streamline ongoing maintenance, and allow operational data to be easily accessed and analyzed using common tools such as Excel.

The Solution

To address these challenges, Sumitomo Chemical implemented Exapilot to automate key operational processes and improve overall plant efficiency. Exapilot replaced repetitive manual tasks with consistent, rule-based automation, reducing operator workload and enhancing process stability.

The solution enabled automated control of sodium chloride solution flow rates during filter regeneration, along with automatic load adjustments. It also streamlined plant startup and shutdown procedures, ensuring more consistent and reliable operations.

With Exapilot in place, critical processes are now managed automatically, maintaining stable sodium chloride solution tank levels during regeneration. Recovery time following regeneration has been reduced by up to two hours, significantly improving operational responsiveness. In addition, the need for frequent manual flow rate adjustments—previously required up to 56 times per day—has been eliminated, allowing operators to focus on higher-value tasks.

Customer Satisfaction

Operator's comment:
"The introduction of Exapilot has significantly reduced our manual workload, allowing us to dedicate more time to higher-value activities such as planning and programming."

For more Information and Contact
Alarm Behavior Analysis (ABA)
Procedure Analysis for SOP Optimization (e-SOP)

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