

Honeywell Specialty Materials Plant Enhances Productivity with Advanced Procedural Operations Solution



“We took a complicated offline procedure that was running on a periodic basis and automated the entire process removing a lot of the guesswork and manual intervention that was previously required. Improving the consistency of the catalyst regeneration reduces human error and process variability, resulting in improved catalyst performance, increased plant capacity and efficiency, and reduced costs.”

Jim Hull, Plant Manager, Honeywell Specialty Materials Geismar Site

Benefits

At the Honeywell Specialty Materials plant in Geismar, Louisiana, the world’s largest producer of hydrofluoric acid, the company sought a way to find a balance between operational accountability and advanced procedural improvements to help enhance the productivity and reliability of the plant.

The company implemented an advanced procedural operations solution from Honeywell Process Solutions. Known as Procedural Operations, the solution enables automated control of offline procedures within Honeywell’s Experion® Process Knowledge System (PKS). Significant benefits realized at the Geismar plant after implementing this advanced procedural operations solution included promotion of standard work and an increase in operator accountability. Other benefits included:

- Reduction in the time plant was operating at a lower rate
- Reduction in the operator load --by automating the process the operator need only check and verify process compliance with important trigger points
- Greater ease of use and testing for operators
- Sequence control module in Experion enabled easy programming and testing offline before system was implemented
- Increased catalyst efficiency - expectation of longer and more stable catalyst life by reducing regeneration variability



The Honeywell Specialty Materials plant in Geismar, Louisiana enhances productivity through advanced procedural operations solutions.

Background

The Honeywell Specialty Materials facility located in Geismar, Louisiana was constructed in 1967 and is located on the Mississippi River. The site comprises 1,900 acres, 240 of which are currently developed. Honeywell employs approximately 240 at the site, with another 100 contractors on site at any given time.

The site is occupied by Honeywell Specialty Materials and four other companies with Honeywell as host to provide services such as power, medical and security. As host, Honeywell is responsible for the perimeter security of the entire site, as well as the security of the Honeywell facility itself. Honeywell produces several chemical products at the site including hydrofluoric acid, fluorocarbon refrigerants, and

Alcon™ Resin. Much of the hydrofluoric acid is used captively on site.

Challenge

At the Honeywell Specialty Materials Geismar plant, the company was looking to improve operator performance and enhance productivity. One of the chemical plants uses reactors which are taken offline on a regular basis to regenerate the catalyst. However, the plant suffers a reduction in throughput whenever reactors are in regeneration. Moreover manual regeneration may produce catalyst performance variability depending on past reactor history and how well operators regulate the lengthy regeneration process. Honeywell Specialty Materials wanted to minimize the throughput reduction and have the catalyst run as long as possible at the same performance level, and reduce the time it took to regenerate the catalyst.

When the system is taken offline a series of operators had to meticulously perform every step over an extended period. If the operator is busy, then the regeneration needs to wait. Typically the plant required multiple regenerations per year so the amount of downtime and loss of productivity was taking a toll on the operators and plant efficiency.

“We had to find a way to automate this process and look for a way to minimize the amount of time that the reactors are taken offline to regenerate. Plus we want to reduce the cost of the catalyst,” said Tom Williams, Geismar Automation Showcase leader. “The only way to meet our goals was to find a way to automate this process and remove some of the variables we couldn’t control.”

More Information

For more information on Honeywell’s automation solutions, visit www.honeywell.com/ps or contact your Honeywell account manager.

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Solution

A natural fit because it uses Honeywell’s Experion PKS solution, the Geismar site turned to Honeywell Process Solutions and its advanced Procedural Operations solution. Based on Abnormal Situation Management (ASM) Consortium research and guidelines, the solution helps automate control of offline procedures focusing on operational readiness and effectiveness. In addition, the Procedural Operations solution includes migration of manual offline procedures using Sequence Control Manager (SCM) and Recipe Control Manager (RCM). Integrated into Experion, the process is able to sequence logic and programming into the standard control environment making it easy to test and program offline.

“With Honeywell’s advanced Procedural Operations solution we were able to reduce a variety of factors and that helped contribute to the success of the project,” said Jeff Richards, automation site leader. “We should be able to reduce catalyst performance variability, reduce offline time, reduce catalyst losses and reduce our utility consumption – all of which contribute to improved productivity at the plant.”

In addition, the Procedural Operations solution inserts a new level of reliability into the overall process. “Because the process is now the same every time we expect to reduce the variability resulting in cost savings for our site,” said Richards.

Another benefit of the now automated catalyst regeneration was an improvement in operator use and production leaders’ expectations. Concluded Richards, “With Honeywell’s Procedural Operations solution were able to convert a manual procedure into an automated system that incorporated operator check and trigger points based on demonstrated best practices. We look forward to our continued work with Honeywell Process Solutions to make the process even more efficient.”

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