

Monitoring for the golden balance

On Yara's plants in Porsgrunn they used to measure and register emission manually which was a time consuming process with risk of doing human mistakes. They saw the need for automated, quick and precise monitoring. Neo Monitors answered with an in-situ-solution that did accurate and rapid monitoring directly in the chimneys. By analyzing the emissions we managed to reduce it and find the golden balance, says Karina Aas, Chief Engineer in the technical section in Porsgrunn.



RUNAR LINNESTAD OLSEN FROM BILFINGER WITH TWO OF THE INSTALLATIONS FROM NEO MONITORS

CHALLENGES

On Herøya in Porsgrunn, Yara has an ammonia plant, three nitric acid plants and a calcium nitrate plant. Together the plants produce a wide range of fertilizers that meet the requirements for fertilization of crops under varying climatic conditions and on different soils. Half of the production at Porsgrunn goes to overseas markets, mainly in Asia. The rest goes to Europe.

– Our plants also produce a wide range of gases and chemicals for industrial use, says Karina Aas, Chief Engineer in the technical section in Porsgrunn.

Herøya is Norway's largest and most important industrial area and the fertilizer production is taking

place in the world's largest mineral fertilizer (NPK) factory. NPK is produced through the Odda process or nitro phosphate method, in which calcium phosphate is dissolved in nitric acid and converted into fertilizer.

– High standards and focus on environment and safety is essential for a stable and safe operation. Included here is monitoring emission in our chimneys. Solutions from NEO Monitors gives us quick and accurate analysis on the level of nitrogen dioxide (NO₂) and nitrous oxide (N₂O), says Aas.

Critical parameters for emission is defined and monitored. Special attention follows cases where emission increases, but Yara also has focus on optimizing processes. In addition, all emissions

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are under BAT levels, defined by EFMA (European Fertilizer Manufacturers Association).

– We used to measure and register emission manually. This was a time consuming process with a risk of doing human mistakes. We saw the need for automated, quick and precise monitoring and results. In the process of choosing the correct solution we brought in Bilfinger Industrial Services Norway, says Aas.

SOLUTION

– First we examined the market for what kind of solutions could fulfill our needs and how the solutions could easily be installed in the chimneys. A request was sent to different manufacturers.

Neo Monitors answered with an in-situ-solution that did accurate and quick monitoring directly in the chimneys. Today Yara has two NO₂ analyzers and two N₂O analyzers – one of each in both chimneys. These are operated by Bilfinger with 24/7 support from Norsk Analyse, a worldwide provider of turn-key analytical solutions and service for the process industry.

Byproducts are formed when raw phosphate is dissolved in nitric acid. This runs through a cleansing process, but still waste is formed. The NO₂ emission is monitored continuously, and Yara has registered that N₂O is formed from the same sources. Yara is taking action to gain a controlled regulation.

– By analyzing the emission we manage to reduce it and find a golden balance, says Aas.

– The solutions and services we get from the collaboration with NEO Monitors, Norsk Analyse and Bilfinger saves us time and money, and we are confident when it comes down to the results. We are very pleased with the acquisition process that Bilfinger did for us. They were responsible for choosing the correct and tailored technical solution. The choice they made witnesses deep expertise in the area, says Aas.

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“I HAVE NO PROBLEM GIVING NEO MONITORS MY STRONGEST RECOMMENDATIONS. ONLINE MONITORING AND REPORTING, TOGETHER WITH COMPLETE OVERVIEW OVER TIME, CONTRIBUTE TO PROCESS OPTIMIZATION THROUGH SMALL ADJUSTMENTS” KARINA AAS, CHIEF ENGINEER



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