

System 800xA

Potatoes to protein with a new control system at Lyckeby Starch



Lyckeby Starch in Kristianstad extracts proteins as a bi-product in the conventional production of starch and fiber. The plant involved is effectively operated using the ABB 800xA control system.

In September 2010 Lyckeby Starch in Kristianstad started up an installation that extracts proteins as a bi-product in the conventional production of starch and fiber. It is the first of its kind in Sweden, the protein from starch being used in animal feed, and it is effectively run using the ABB 800xA control system.

The raw material for the production of starch at Lyckeby Starch's factory is potato. "Operations are dictated by the harvest. Because of this we are what is known as a campaign industry," says Lars-Åke Åkerlund, who is responsible for electrical and automation aspects at the company.

In 2010 the building of a process plant was begun to enable the handling of a greater amount of raw material and thus the production of 1 600 tonne protein per year.

"The concept comes from the Continent where similar plants are in operation," says Lars-Åke Åkerlund. "It means that value is added by getting more out of the raw material. The protein is principally used in cattle and pig food."

Washed and grated

The plant was implemented in September. The season is short, just four months. Lars-Åke Åkerlund and his colleague Anders Collijn show me around the plant.

"The potatoes are grated and washed before the starch and bi-products are extracted," says Lars-Åke Åkerlund.

“We are extremely happy with our choice,” says Lars-Åke Åkerlund. “Not only do ABB’s products meet our requirements, their personnel were competent, flexible and always willing to adapt to our requests.”



Lyckeby Starch's Head of electricity and automation, Lars-Åke Åkerlund (left), Henrik Persson from ABB and Anders Collijn from Lyckeby Starch, standing in front of sacks of protein.

The residual is among other things fruit juice. “It enters via these pipes,” says Lars-Åke Åkerlund pointing, “and ends up in a decanter, a machine that separates the protein from the fruit juice.”

The resulting protein is in the form of powder. The process required a separate system. “It was beneficial to start from scratch rather than try to add to the old system. At the end of the season we could evaluate it. Doing this in a working process is of course much more difficult. We also want to prepare for a centralization of operations, through which our four production units will become three.”

The decision on the system for the new plant was taken in two stages. “The first stage was to decide on the type of system that was most suitable,” says Anders Collijn. “In the past we have mainly used

PLC-Scada; we compiled a requirement specification and discovered that a DCS system best suited our needs, partially by being more effective from an engineering perspective. It is also an integrated system.”

The second stage was choice of supplier. ABB was finally decided upon. “There are several reasons for this,” says Lars-Åke Åkerlund. “Price was one, of course, but also the fact that in response to our questions, we were efficiently provided with all the information we needed to base a decision on.”

One single data base

The customer choose System 800xA. “In this system all the functions are contained in one data base,” says Henrik Persson from ABB. “This is integrated with the field instruments, which means that the operator can monitor,

for example, flow measurement and all the other necessary criteria in the same system. This is very effective and enables the operator to make the right decision at the right time.” And continues, “The DCS system is often seen as being expensive compared to PLC Scada, but the total cost for DCS can be lower since engineering time is reduced.”

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The deal included training and project support where ABB and Lyckeby personnel worked side by side on the installation and Anders Collijn and his colleague Joachim Haag did the programming.

“Lyckeby personnel are familiar with the process industry and already possess knowledge that is rarely found elsewhere,” says Henrik Persson. “This meant that we had no problem understanding each other. We lived with the plant throughout the project, changed things and made improvements.”

“Production exceeded our expectations,” says Lars-Åke Åkerlund.

Lyckeby Starch

Lyckeby Starch is a member of Sveriges Stärkelseproducenter (Sweden’s Starch producers), an economic association jointly owned by its 800 or so members.

The company produces starch, fiber and protein for use within the paper, food and animal food industries and has four starch production plants: Kristianstad, Bäckaskog, Mjällby and Jämjö.

ABB’s supply

- System 800xA.
- AC800M and S800 I/O.
- Device Integration, HART integration with the field instruments.
- 2 work stations.
- Frequency converter ACS800

The new plant produces protein in the form of powder that is used in cattle and pig food.



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