

Case SSAB Steel Mill  
Drives Remote Support prevented likely stoppage of  
coke production





If there is a malfunction in the coke elevator, the whole process stops since nothing can be lifted.



Thanks to drive alarms spotted via the Remote Support portal, the SSAB team discovered the possible elevator problem at an early stage.

Customer benefits	
<b>Fast fault identification</b>	Remote monitoring system alarmed about a possible fault in one of the drives on-site.
<b>Fast response</b>	ABB noticed the alarm and immediately contacted SSAB.
<b>Reduced unplanned downtime</b>	Thanks to the early notice and cooperation, unwanted downtime was avoided.

At the giant SSAB steel factory in Raahe on the west coast of Finland, a new Drives Remote Support service delivered a positive payback from the very start. The remote service, designed to allow ABB's drive experts to analyze alarms on drives from long distances away, helped the mill's coking plant avoid a possible breakdown.

Even though the system was only in the early stages of a pilot trial aimed at testing the concept of Remote Support, an alarm on the critical coke elevator operation was noticed by ABB personnel. Acting quickly, both remotely and on-site, the combined SSAB and ABB teams successfully worked together to avert what could have been a very big problem.

The coke elevator plays a key role in the plant operation, explains Ari Korkala, an electrical maintenance planner in the coking plant. "In the coking plant we have what is called the dry quenching stage where an elevator lifts a bucket with a hot coke into the dry quenching chamber. The elevators are very crucial and if there is a malfunction, the whole process stops since nothing can be lifted. In addition, the coke is very hot at about 1050 °C, so that if it drops

somewhere in between, it could cause a fire in the electrical rooms or elsewhere."

**Close cooperation led to pilot test**  
SSAB Raahe and ABB have a very long history of good cooperation, which led to this novel pilot trial being suggested. In the coking plant, ABB has been supporting the maintenance of the biggest drives, the ACS800 multidrives, for several years.

Therefore, ABB and SSAB agreed to work on the project, with the main aim to increase the reliability of key drives and motors in the coking plant. This involved setting up a remote service system which would allow ABB's drive experts to look at drive data from a distance, when necessary, to analyze possible problems in the drive application. Recognizing the critical importance to the coking plant played by the coke elevators, and the motors and drives that make them move, it was decided that the first test would be done on the ACS800 elevator drives.

**Using intelligence in a better way**  
Jaakko Myllylä, manager of ABB Drives and Controls Service in northern Finland, picks up the story. "To improve reliability, we were thinking about ways that we could more fully use the



Timo Vierimaa, SSAB production manager

**Both sides benefit**  
"I always see that when companies have good relationships with each other, it's productive and both sides can benefit. My idea and wish is that we will continue in this way, with our good cooperation, where we can utilize ABB's expertise, especially in the area of drives, and also for motors."





Upon examination, it was confirmed that certain drive components needed to be replaced.



The work was done in a quick and systematic way, thus avoiding any production disturbances.

potential of the drives, which are very intelligent devices. So in cooperation with SSAB we, step-by-step, installed the remote communication and monitoring system. This also involved much work with software and connectivity.”

#### Alarms led to analysis and action, avoiding breakdown

Already during the course of the project startup, the team observed that one of the drives covered was giving frequent alarms. Putting the new system immediately to the test, data from this drive was analyzed by the ABB experts located far away in Helsinki. They spotted a current imbalance and, based on their experience, knew that this type of alarm sequence can often result in damage to power components. This, in turn, can stop the drive and therefore the elevator. Aki Heikkilä, electrical maintenance supervisor, describes what happened.

“Thanks to the new ABB Remote Support service, which was still in the pilot phase, we saw this possible elevator problem at an early stage. We were getting alarms and ABB spotted some indications that the drive was acting abnormally and might become faulty. We went to check it and, upon

examination, we confirmed that certain drive components did in fact need to be replaced. Otherwise, there was a chance that the critical drive on the coke elevator would break down. Happily, we did the work in a systematic way, before there was any production disturbance or unplanned downtime.”

#### This is the future

Timo Vierimaa, the production manager at the SSAB coking plant, is very pleased with the new system. “Motors and drives play an important role in our processes, not only in terms of production reliability and quality, but also of course regarding occupational safety for our people.”

“This Remote Support service is one of those things which has been fun to do with ABB because we’ve been their pilot. During this pilot we realized that remote support was going to be both a nice thing to try but also a very important service for our future. It has served us already in practical terms.”

“For me, I think this use of modern new technology and new systems in condition monitoring is a trend for the future.”



#### SSAB Raahe in brief

SSAB is a highly-specialized global steel company with production plants in Sweden, Finland and the USA. The company’s Raahe steel mill in Finland, which was traditionally known as ‘Rautaruukki’, is one of the biggest operations in the group. The coking plant in Raahe is the only one in Finland, with the coke produced being used as fuel in the steel mill’s blasting furnaces. In addition to this, a coke oven gas is produced and distributed inside the entire mill as an energy source.

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