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XLPE-cable Production Optimization

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Setup Time Reduction at Armoring Line

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Abstract

At ABB's high voltage cable factory in Karlskrona, there is a line production that is regarded as a bottleneck. The production rate at this workplace as well as the large variations of setups has created two major problems. The first problem is that it has become difficult for the planning department to determine the lead times for delivery to the customers. The other problem is that the long setup times has made this line production the bottleneck of the whole production.

The factory at ABB HVC includes a number of line productions, where each line has their own purpose and value adding processes. The armoring line AR50 that this project has the focus to improve has the last value adding processes for the factory's main product.

The factory's main product is the Cross-Linked Polyethylene cable, shortened XLPE. There are several different advantages with the XLPE-cable system. First of all they are maintenance-free and environmentally friendly. The main reason that the XLPE-cable is environmentally friendly is because it have low electrical losses. Since the submarine cables are underground the cables are invisible and not effected by weather conditions.

This project implements the method SMED as well as various methods from the LEAN transcript in order to reduce the setup times and create a more stable and efficient production. An Ishikawa diagram were used in order to determine the root causes of the problems. Later both technical and management solutions were proposed and implemented.

The project has concluded impressive results regarding setup time reduction and annual cost savings. It also enlightens the large potential for further improvement. This project will be continued during the year of 2014 in order to implement the proposed solutions. The future improvements are not just technical but also related to management and group dynamics.

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