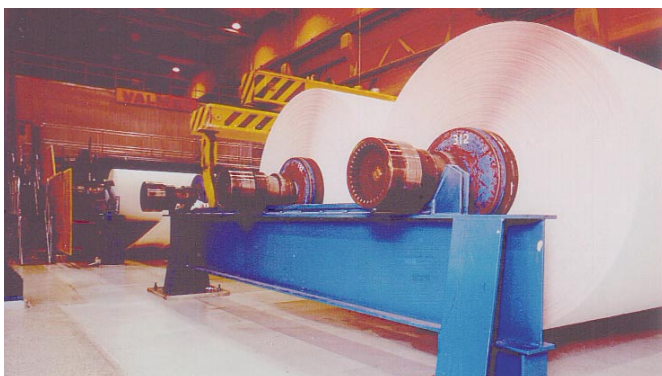**Industry: Paper**
Products Used: Modular PLCs

Reverse engineering gets winders back under control

Caledonian Paper in Irvine, Ayrshire, use sophisticated control systems in the manufacture of lightweight coated paper such as glossy magazine paper. Much of the plant is controlled by PLCs which are unfortunately now obsolete. Worse yet, spares were becoming difficult to obtain.

Caledonian Paper decided that the best course of action would be a progressive modernisation programme with the machines selected for the first stage of the programme being the two rewinders which cut the reels of paper to the required diameter and width.

A plan was drawn up to replace some of the old processors with new devices and keep the surplus for use as spares for the rest of the plant. The implementation contract was awarded to Mitsubishi Electric's System Integration Partner, Elite Control Systems of Bathgate.

Application story first released February 1997 by Mitsubishi Electric UK

A major complication was that no documentation was available for the custom written programme code controlling the rewinders. This meant that Elite had to start by analysing the programme code contained in the old processors before they could rewrite it to suit the new PLCs. They then had to check it thoroughly and finally fit the new processor into the system. Elite call this "reverse engineering", a highly complex task that requires a detailed working knowledge of not just the software and hardware but also the machinery in the plant and the process it uses.

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> **A Systems Integrator is… your champion to make sure the project is a success**
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> Sam MacKay
> Elite Control Systems
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> **"**

Sam MacKay Managing Director of Elite says explains: "Using a Systems Integrator is about finding someone who has the experience to help you clarify your requirements - including understanding the business issues - implement the project on time and in budget and provide continuing support. In short, your champion to make sure the project is a success."

Caledonian Paper and Elite Control Systems have shown that control equipment becoming obsolete does not have to be the major threat. However, those companies which rely on technology, and have not planned ahead, could find themselves in al sorts of trouble in the future.