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Application Awards 2012

Industry Automation
SIMATIC S7-1200

www.siemens.co.uk/s71200

Troy Panels

Location of Application: Dublin, Ireland

Company Website: www.troypanels.com

Key Business Activities: Electrical Control

Name of Application:

Hydraulic safety crane dispenser

Description of Application:

Steel rope dispenser

This application is innovative and has the following unique attributes:

This project is the brainchild of a crane company who specialise in the erection and disassembly of large scale wind turbines. The problem they have, and any every other crane company has, is that cranes are not designed to lift off-load. This means that upon decommissioning of outdated wind farms the crane has to take down the nacelle, blades etc which means lifting the "hook" up off load, which in turn means the steel rope on the crane is unwinding very slack. When taking down a forty ton nacelle which, because of the slackness of the steel rope, the nacelle begins to fall until this slack is taken up. This stop/start falling motion continues until nacelle is safely on the ground. It is not uncommon for cranes to topple and fall over causing serious injury and large scale damage. Our hydraulic machine controlled by a S7-1200 acts as a "false" counter weight, the machine sits opposite the crane dispensing cable which is hooked onto the crane via a hydraulic ram. The ram gives a certain amount of "play" for safe operation. The crane is fooled into thinking it is lifting 12 ton of weight and in turn keeps the steel rope on the crane taught. Once at nacelle height the crane disconnects from our machine and connects to the nacelle and lowers it safely to the ground without any sudden falls.

Please note our machine never leaves the ground

What added value does this application offer for the end user?

The main added value of this system is safety and then secondly expense for the crane contractor. This application can prevent serious injury and even death as well as damage to cranes and turbine which are both incredibly expensive. In addition large insurance claims and policy expenses are substantially lowered.

What contribution does this application make to sustainability?

Wind power is renewable, widely distributed, clean and produces no greenhouse gas emissions during operation. As this machine is primarily designed for large scale wind farms it greatly adds to sustainability.

What does the PLC control?

The plc control large winches, hydraulic rams, electric brakes, warning systems and variable speed drives.

Why does the S7-1200 fit so well into this application?

For its software ability as well as it's affordability, this project although successfully tested is still in prototype stage so our client did not want money wasted in over expensive control equipment until the theory was tested. The price and functionality of the S7-1200 was in keeping with that specification.