

Design Services Alliance



Sellafield Ltd



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Reachback case study: Replacing obsolete control systems

KEY DETAILS & DRIVERS

The Sellafield site has a significant number of operating plants and facilities with ageing control and protection systems. It is essential to the site's mission that upgrading or replacing these systems should not have any negative impact on operations.

At nuclear power stations, replacing obsolete systems can have significant implications for a plant's safety case and cause lengthy and expensive outages. As a result of this, a lot of work has been done to find ways in which systems can be replaced with minimum impact on energy generation.

The replacement of high-integrity control systems at two of EDF's UK plants – Heysham 2 and Torness – provides an excellent example of how such a fleet critical project should successfully be tackled. At the two stations the fuel route plant, including the fuelling machines, were originally controlled by a bespoke control and protection system called Reypak.



Heysham 2 nuclear power station

The system had become obsolete and unreliable and presented significant availability issues for the two stations. The fuel route systems are fundamental to the safe and reliable movement of fuel and components, which are in turn essential for the continued operation of the reactors. To avoid the need to shut down reactors the solution was phased so that it would deliver an immediate improvement in reliability prior to full migration of the code to a new Siemens system. A process was created to migrate and validate the code against a dynamic plant model and test environment which allowed 100% full offsite testing. Having completed migration and off-site testing, it was possible to reduce the on-site installation and testing to a minimum, thereby reducing plant outage significantly.

To pass on experience from the Reypak replacement and also to raise awareness of the niche capability which the project has created, Vince Turner of Wood gave a presentation to the Sellafield Ltd EC&I RE Forum on 7th December 2017.

WHAT IS THE BENEFIT?

Adoption of the techniques and capabilities applied in the Reypak replacement project can help the site to operate plant and facilities safely and efficiently for years to come.

WHAT NEXT?

Following on from the successful presentation we are further publicising the capability in case the right opportunity arises to deploy it at Sellafield and thereby support the site's mission.

Contact

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