



Standout projects by committed and talented people

Over the last year, we worked on a number of key projects that clearly showcased the diverse skill sets of the various Applus+ divisions. This section features some of the initiatives that have contributed to bolstering the company's reputation as a global benchmark within the TIC sector.



Technology

REALISTIC CREEP-LIFE PREDICTION IN WELDS FOR THE ENERGY SECTOR

With a view to **advancing and evolving Applus+ services by bringing about technological innovations that are tailored to client needs**, the Energy & Industry Division in Canada, through its brand SKC Engineering, has developed a case-specific numerical recipe and integrated it into a welding simulation model, **allowing them to identify areas susceptible to creep damage**.

This model came about following the repeated observation of failures in heat recovery steam generator (HRSG) welds after a relatively short in-service life.

The team constructed an in-house model of creep-life prediction for P91 welds, which was then integrated into the Division's welding modelling and simulation software. This allows us to predict HRSG failures.

This work **illuminated the role of a critical fault that can occur in welded P91** and that causes the majority of early-service-life failures reported in this material around the world, but is missing from the standard design methodology.



The result is a **practical solution to engineering challenges requiring solutions that can't be found in published standards**. This work underscores the importance of taking into account the effects of welding in the design stage of energy infrastructure, as well as showing how these effects can be modelled using the proper tools.

Photography. The Division developed a unique case-specific numerical recipe and integrated it into the welding simulation model, after failure observation.