

## RISK BASED INTEGRITY MANAGEMENT (RBI) IN COMBINED CYCLE

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### Abstract

Initial risk analysis with RBI methodology was carried out before start up the Combined Cycle *Cerro Dragón*, one of the most important recent investments of PAE.

Normal conditions planned with operation and possible diversions or transient conditions have been considered in the risk analysis. Damage mechanisms have been identified and evaluated systematically and corrosion rates (mechanisms of metal loss) or susceptibilities have been quantified.

For designing risk based integrity plans, risk projections and simulations in different scenarios have been used in each component, mainly for equipment with damage mechanisms with high potential of impact on risk such as accelerated corrosion by flow (FAC) and temperature mechanisms (thermal fatigue and creep). Determining a 0 risk level lets anticipate accelerated damage mechanisms.

The main aspects and results of the project developed between 2017 and 2018 are introduced, focusing on the relationship between the risk level of the components and the design of the integrity plans as well as the importance of early detection of risk levels to adapt inspection, monitoring and mitigation tools. The benefits of the implementation of the RBI methodology are quantified.

Key words: risk, RBI, integrity management, combined cycle, cauldron, inspection, risk mechanisms