

Case study: Asset Management and Availability Modelling
 Client: Santos
 Location: Adelaide
 Time: 2009 - 2010



Problem

The Moomba gas processing facility consists of many complex subsystems. The function of each system is imperative to fulfil production obligations. It had been demonstrated that previous reliability studies may not have always addressed the true causes of downtime. Availability modelling was identified as an important tool to shift from a reactive paradigm by revealing specific areas within a subsystem, which would benefit from reliability centered maintenance and analysis of defects.

SecuoS approach

Santos, with the assistance of current SecuoS consultants, has undertaken an overhaul of its Reliability and Maintenance Management System to improve equipment performance and reduce costs. This value enhancement initiative includes modelling equipment capacity and availability with a modelling tool.

Step	Description	Data source	Model input
Process selection	fix the reference stream	-	the selected unit
System configuration	functional relationships of the components	process engineers and operations personnel, P&IDs	model diagram
Data collection	parameters of the critical equipment	engineering and asset management databases, logs	downtime modes and parameters
Capacity confirmation	in terms of the reference stream	design documents, hydraulic simulations, capacity tests	capacity profiles
Results analysis	loss analysis, criticality ranking	model output	-

Outcome

Availability modelling of the Moomba plant has started to demonstrate clear benefits for Santos. The modelling process has allowed the quantification of risks to the effectiveness of gas production and better quantification of the benefits of past projects.

The modelling process has highlighted the importance to capture equipment downtime events, in order to better identify the causes of system downtime.

The benefits derived have demonstrated that availability modelling has widespread application, and as such is now being used to model other assets. Availability modelling is improving communication across engineering disciplines, improving the corporate understanding of the impact of availability on the effectiveness of gas production.

The business is now focused on availability over reliability as a true measure of plant performance.

Asset Management and Availability Modelling

Mark Chadderton and Khalee Field, Santos, presented at ICOMS, 2010.

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