



DIGITAL SOLUTIONS

SYNERGI™ PLANT

Performance Forecaster module

Understanding the reliability trends of your asset is a fundamental step in the journey of operational excellence. Operational performance forecasting empowers you to make informed decisions about asset strategy by forecasting system performance.

Today, there is disconnect between the information in the design phase and the operational phase. Most of the knowledge acquired in the design phase, which is typically added to the reliability, availability and maintainability (RAM) models, is not utilized during the operational phase. Conversely, the operational phase is typically supported by integrity management methods such as risk-based inspection (RBI), reliability-centered maintenance (RCM) and safety integrity level (SIL) that focus on managing specific equipment items.

The Performance Forecaster module in Synergi Plant allows companies to move models that have been created during the design phase to the operational phase. The model, which can calculate the performance and identify trends of underperforming

production-critical elements, will then benefit from operational data. This will allow the model to get closer to the real-plant operation. In the current oil and gas market scenario with profit margins under pressure, companies are trying to increase efficiency, both from a production perspective but also in how they are utilizing their resources.

This means concentrating on production units, system and equipment items that lead to higher risk to performance and reducing effort on those that are over-maintained. The Performance Forecaster module will also allow information to flow efficiently through the company and support the maintenance of the performance forecasting model.

How to get started

Existing plant-wide reliability models, which are typically available during the design phase, can be easily integrated to a web-based collaborative environment. During the design phase, models will typically incorporate reliability data from industry standards, as they are unable to replicate the actual trends in the asset. These models will vastly benefit from replacing the reliability data defined during the design phase by operational data. With this approach, companies can benchmark performance against design configuration and assess the criticality of the different equipment items. Further benchmarking can be made by performing sensitivity analyses to assess the cost-benefit of implementing a new reliability, maintenance and operations strategy.

The main objective of this exercise would be to identify the highest contributors to production loss, its trends and to optimize availability and reliability of the system. Conversely, the lowest contributors are also ranked, allowing companies to reduce resource allocation to less important activities.

Finally, the method can be extended and associated with other condition-based maintenance techniques, such as risk-based inspection (RBI), reliability-centered maintenance (RCM) and safety integrity level (SIL).

Combining powerful solutions

The Performance Forecaster module combines two powerful solutions from DNV GL:

Maros and Taro provide robust forecasting capabilities with the powerful simulation engine that combines a vast number of operational scenarios. A multitude of key performance indicators are available, giving an extensive view of the plant performance.

The three main results are:

- Production efficiency, availability and utilization - to track individual and global performance of the asset
- Criticality analysis: to rank the smallest and largest contributors to production loss, allowing for prioritization of resource allocation
- Net Present Value: to understand the trends of cost related to revenue and predicted operational expenditure

Synergi Plant offers an all-encompassing asset integrity management solution. It provides a powerful data hub for operational and in-service information with further integration to enterprise resource planning tools (ERP) and computerized maintenance management system (CMMS). Furthermore, the Performance Forecaster module could be integrated with other reliability and integrity techniques, such as reliability-centered maintenance (RCM), risk-based inspection (RBI) and safety integrity level (SIL).

