Offshore RAM Analysis Studies

RAM analysis has been widely used by MES to enable operators to evolve production solutions which minimise impact on revenue and expenditure. RAM analysis provides a valuable design review technique to address the following:

- Quantifying the production availability of the onshore facilities;
- Identifying individual equipment contribution to production losses;
- Evaluating the effects of design changes on production availability;
- Comparing alternative design options;
- Optimising the spare parts holding; and
- Establishing performance targets.

RAM Modelling Tool (PLASMA)

MES has an in-house RAM simulation package called PLASMA. Key features of PLASMA include:

- Used within Oil & Gas industry for over 14 years;
- Evaluation of Production availability and performance parameters;
- Modelling complex systems using multiple layers of RBDs and PFDs;
- Deterministic and stochastic techniques;
- Series, Active Redundancy and Standby Redundancy;
- Criticality ranking;
- Maintenance modelling (Planned, Spare parts and Seasonal delays);
- Operating Policies (Flaring, Load Shedding and Line Packing);
- Lifecycle Scenarios (CAPEX, OPEX and Asset Optimisation); and
- Logistics (Tanker modelling including weather impact)

Recent Offshore Studies

BG Trinidad & Tobago Hibiscus Platform (Trinidad)
RAM study for installation of compression module on offshore platform. Study encompassed determining overall availability, optimising planned maintenance of gas turbines and phasing in compression operations.

Talisman Claymore Compression Platform (UK)
RAM assessment of compression module against target availability for compression system. PLASMA was used to model yearly planned maintenance, mobilisation delay associated with spare parts and maintenance crew.

Agip Kashagan (Kazakhstan)
RAM study performed to estimate production availability for five process concepts in the Concept Selection Phase of Kashagan Full Field Development in terms of production critical equipment. Impact of equipment maintenance strategies on the overall performance of each concept was also assessed.

BP ACG Phase III Water Injection (Azerbaijan)
Performed a number of availability analyses for both topsides and subsea water injection facilities. RAM study determined production availability and included sensitivity runs on spare parts for Subsea control modules, choke valves, x-trees and flexible pipes. The impact of logistics on the overall availability was also assessed.

For further information on MES’ bespoke PLASMA software, please contact one of our specialists.