RISK AND SAFETY SERVICES

RELIABILITY, AVAILABILITY & MAINTAINABILITY (RAM) STUDY.
AN INNOVATIVE APPROACH TO SOLVING PRODUCTION RELATED RISKS.

BUSINESS CHALLENGE

A well-designed and properly implemented asset optimisation program can significantly lower project costs. RAM modelling assesses a production system’s capabilities, whether it is in operation or still in the design phase. The results from RAM modelling will identify possible causes of production losses and can examine possible system alternatives.

SOLUTION

What is RAM modeling?

RAM modelling can simulate the configuration, operation, failure, repair and maintenance of equipment. The inputs to RAM modelling will include the physical components, equipment configuration and maintenance philosophy in a system and the outputs can determine average production of the system over the facility or vessel life. RAM studies will generate sufficient data on which to base decisions for possible systems changes that may increase system efficiency, and therefore increase project profits.

WHY CHOOSE BUREAU VERITAS?

Bureau Veritas’ RAM modelling capability has been previously sought by companies looking to increase the productivity of their systems. Bureau Veritas has extensive experience that has been developed through more than 100 RAM and supply chain studies. Bureau Veritas can guide you through the RAM process to help answer the tough questions including:

- Detecting failures in the early part of design;
- Optimising maintenance schedules;
- Adequately allocating the spares inventory;
- Increasing the effectiveness of logistics; and
- Identifying equipment priorities on failure.

RELATED SERVICES

- Functional Analysis
- Root Cause Analysis (RCA)
- Fault Tree Analysis (FTA)
- Reliability Centred Maintenance (RCM)
- Failure Mode Effects Analysis (FMEA)
- Weibull Analysis
- Planned Maintenance Optimisation (PMO)
OUR APPROACH

Our reliability engineers will liaise with you to identify your needs and develop the basis for the RAM model. We use tools and methodology of both functional and dysfunctional analyses to agree upon the model configuration and start the modelling exercise. Our team can use various modelling tools for RAM studies depending of your requirements:

- Monte Carlo Simulations
- Reliability Block Diagrams (RBD)
- Markov Graphs
- Petri Nets

Once a base case model is established, sensitivity cases can be used to really add value and do so cost effectively in a controlled manner prior to costly changes in design. Analysis of RAM models can generate results and recommendations to improve the design, through changes in equipment configuration, or to achieve operating targets through changes in maintainability and operability. Communication throughout all stages with you and our reliability engineers is continuous and ensures optimum results.

REFERENCES

- Gorgon LNG Development (Chevron)
- LNG Receiving Terminal (ConocoPhillips)
- Kupe Offshore Gas Development (Technip/Woodside)
- Exmar LNG RV Regasification Installation
- Gasfin Floating Storage Regasification Units

FOR DETAILS ABOUT THIS SERVICE, PLEASE CONTACT BUREAU VERITAS
P 888.357.7020 | E USINFO@US.BUREAUVERITAS.COM | WWW.BVNA.COM