



Maximize the Long-Term Value of Your FPSO

64 percent of oil and gas projects encounter major and continuing production attainment problems in the 2 years after first oil or gas.

"Oil and Gas Industry Megaprojects: Our Recent Track Record," April 2012

What if...

- ...you were able to seamlessly integrate all control systems throughout your field, including the FPSO and the seabed?
- ...your technicians could rely on actual asset health instead of a schedule when prioritizing maintenance?
- ...you could detect and prevent damage from asset failure, corrosion, erosion, and sand before it affects your process?
- ...you could save trips to the field by remotely diagnosing and configuring your instrumentation?

Forty-five percent of oil and gas megaprojects suffer extended production shut-ins into the second year after first oil. On average, these projects fail to meet even half of their planned first-year production.¹ Sometimes rushing to meet the first oil date while minimizing the CAPEX investment leads to sustained—and many times permanent—production constraints.

These production constraints in turn make it very difficult to meet cost and revenue targets. Either you choose to live with frequent shutdowns and reduced production, or you spend a lot of money to fix the problems and restore production levels. The problem is that making upgrades and system changes when the oil is flowing is not only more expensive, but riskier. Upgrades that are made after first oil may yield a minor improvement in production volumes, but also add to your operating and production costs and your exposure to HSE incidents.

NOT MEETING PRODUCTION TARGETS

Even the best production plan cannot compensate for the losses you incur as a result of unplanned shutdowns and unforeseen process constraints. If too little emphasis is placed on automation during early planning phase, the system will not be able to prevent or handle abnormal situations that typically occur on an FPSO. Common process upsets—such as compressor and pump failures, stuck valves, pipeline and process leakages, scaling or sand clogging, and false alarms resulting from poorly integrated systems—can all cause you to miss your production uptime and efficiency targets. Still, many of these issues can often be anticipated in the early design phase.

OPERATING COSTS ARE TOO HIGH

Preventive maintenance is generally considered more effective than reactive maintenance. However, preventive maintenance requires more staff and adds unnecessary costs and risks through intervention on equipment that often proves to be perfectly healthy. Moreover, preventive maintenance might not capture all impending problems. At the same time, overspending on chemicals to protect your process against corrosion, scaling, waxing, and hydrates can further increase operating costs.



CANNOT AFFORD TO HAVE ANY INCIDENTS ON THE VESSEL

Incidents that threaten the safety of your staff, FPSO, and the environment are even more detrimental than unplanned shutdowns. In Australia, research has identified poor design specifications—mainly that the problem had not been anticipated during the design phase—as the primary root cause for offshore safety incidents in the last three years. Globally, the risk of a fatal accident is 10-50 times higher during helicopter shuttle than when on an offshore installation. Thus, even routine maintenance and repairs that require helicopter shuttles not only increase operational costs, but also greatly increase the risk of an accident.

Optimize Your Entire Field to Increase Production

By engaging with Emerson early in the FEED phase, you can learn about Emerson's automation solutions and how these can help you improve the long-term profitability of your field.

DESIGN AN FPSO THAT WILL TELL YOU WHEN IT NEEDS MAINTENANCE

Armed with advanced diagnostics, machinery health monitoring, and monitoring of essential assets, corrosion, erosion, and sand, you can improve your FPSO lifespan and uptime.

Anticipate impending repairs

With a wide range of easily deployable tools and wireless sensors that add "eyes and ears" anywhere on your FPSO, you can change your maintenance processes from reactive and preventive to predictive or condition-based. This will save you money on spare parts and unnecessary maintenance, and avoid lost production, which is often expected with reactive repairs.

MEET YOUR REVENUE TARGETS WITH A SELF-TUNING PRODUCTION SYSTEM

An offshore field with its concealed oil and gas reservoirs, production and injection wells, chemical injection points, and producing assets is a complex system that is difficult to understand or predict. By deploying integrated solutions that connect the reservoir model with a pipeline network model, and providing online production data, history matching, and closed loop control of production chokes, gas lift and chemical injection, you can determine optimum well paths, production rates, and injection rates much faster than by trial and fail.

Gain full flow assurance and integrity

With such integrated systems from a single solutions provider, you can also improve flow assurance and asset integrity from the well through the seabed to the custody transfer point. By using comprehensive production monitoring and advisory systems that interpret data and recommend actions, your operators can make real-time decisions to keep producing efficiently.

REVEAL EMERGING THREATS BEFORE SAFETY OR ENVIRONMENTAL INCIDENTS OCCUR

Monitoring your essential assets will reduce the number of unplanned shutdowns and warn you of process upsets and equipment failures that may cause an HSE incident.

Prevent process upsets from threatening your personnel and process

With early warnings from countless "eyes and ears" that never sleep, you will be able to take corrective action before a pending threat develops into a hazardous incident.

"AMS Performance Monitor allows us to improve operational performance by applying best-in-class technology to maintain production and reduce the possibility of downtime."

Denis Thomson
Rotating Equipment
Coordinator, Triton Project
Wood Group Engineering

On the Triton FPSO, Emerson's AMS Suite Equipment Performance Monitor helped detect a bottleneck compressor and improved compression train performance by more than 10%, reduced downtime, and increased gas exports by \$800/hour.



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