

Trip Reduction in Turbo Machinery

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Abstract : Industrial plant uptime is top most importance for reliable, profitable & sustainable operation. Trip and failed start has major impact on plant reliability and all plant operators focussed on efforts required to minimise the trips & failed starts. The performance of these CTQs are measured with 2 metrics, MTBT(Mean time between trips) and SR (Starting reliability). These metrics helps to identify top failure modes and identify units need more effort to improve plant reliability. Baker Hughes Trip reduction program structured to reduce these unwanted trip 1. Real time machine operational parameters remotely available and capturing the signature of malfunction including related boundary condition. 2. Real time alerting system based on analytics available remotely. 3. Remote access to trip logs and alarms from control system to identify the cause of events. 4. Continuous support to field engineers by remotely connecting with subject matter expert. 5. Live tracking of key CTQs 6. Benchmark against fleet 7. Break down to the cause of failure to component level 8. Investigate top contributor, identify design and operational root cause 9. Implement corrective and preventive action 10. Assessing effectiveness of implemented solution using reliability growth models. 11. Develop analytics for predictive maintenance With this approach , Baker Hughes team is able to support customer in achieving their Reliability Key performance Indicators for monitored units, huge cost savings for plant operators. This Presentation explains these approach while providing successful case studies, in particular where 12nos. of LNG and Pipeline operators with about 140 gas compressing line-ups has adopted these techniques and significantly reduce the number of trips and improved MTBT

Keywords : reliability, availability, sustainability, digital infrastructure, weibull, effectiveness, automation, trips, fail start

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