DISCUSSION GROUP P5: Centrifugal Pump Operation, Maintenance and Reliability,
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Proposed topics to be selected from:
Vertical Canned Pumps (VS6 Pumps)
MI Inspections of pumps - (casing thickness) –
How do we know what thickness is good, base line?
Predictive maintenance – how is info recorded
What oil are we using for lubrication bearing housings (oil type, replacement frequencies):
Pump maintenance practices – pull all pump vs just back pullout assy.
Parallel pumping – practices, pump switchover
Motor greasing and use of UT:
Practices for Mothballed Pumps
Repair Specs, use, in house repair specs
Lube oil storage and usage
Mechanical seals and bearings issues
Pump monitoring – how are we doing this and how do we want to do this
Craft training – precision maintenance
Best practices for pump maintenance; Back pullout vs. pulling entire pump:
Open bearing housings vs sealed – wet sump
Seal plan which was not expected – wrong for the application
Preventive/predictive technologies
Off design operation
Mean time between failure (MTBF), other KPI’s – how do we measure, and how do we use the metrics
How to create pump reliability in an unreliable plant
Seal-less versus sealed pump reliability, canned motor pumps versus mag drive
pump reliability
Mechanical Integrity Inspections of VS 6 pumps in hydrocarbon service
Seals in light hydrocarbon service – operations, risk, leak response, maintenance
Pump predictive/preventive maintenance program elements – philosophy, frequencies.
Measures of effectiveness of preventive and predictive programs for pumps
Roles of operations and maintenance/reliability in improvements and data collection
Reliability experience with liquid versus non contacting gas seals applications
Maintenance philosophy for pumps – what constitutes “best practices”
Spare parts – OEM versus non-OEM
Repairs – OEM versus non-OEM service facilities
Pump foundation, alignment and pipe strain influence of reliability
Impact of corporate purchasing alliances on pump reliability
  a. Repair facilities alliances
  b. New equipment purchasing alliances
Repair techniques and material improvements
Portable and on-line monitoring – impact on reliability
Wireless monitoring – impact on reliability and risk of failure
Optimization of thrust bearings configuration
Lubrication system impact on reliability – oil mist versus flood, oil selection
Mechanical Seals
Use of non-metallic vs metallic materials for stationary wear rings
LLDS (Look Listed Feel Smell) – how to build effective daily surveillance by operators and maintenance
Epoxy coating of pump foundations
Bearing isolators – what is the best practice (magnetic vs. others)
Hot alignment – how applied, when needed, application with the current LOTO procedures.