Aiming for a step-change in reliability

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Benefits of being reliable

- Improved safety and delivery time, and reduced cost
  - Improves the operational performance of equipment by reducing break-downs and other downtimes
  - Greater maintenance cost-effectiveness through better use of resources
  - Longer equipment life and lower capital requirements for new equipment
- More motivated operations and maintenance staff
"A reliable plant is a safe plant" – Ron Moore

OEE vs. injuries with equipment not in good order as contributing factor
Shifting culture from a maintenance focus to reliability focus

Rewards
- Staged Decay Short Term Savings
- Overtime Heroes
- No Surprises, Competitive
- Competitive Advantage
- Best in Class

Motivator
- Meet Budget
- Breakdowns
- Avoid Failures
- Uptime
- Growth

Behavior
- Decaying
- Responding
- Org. Discipline
- Org. Learning
- Inventing

Don’t Fix it
- Reactive
- Fix it after it breaks
- Don’t just fix it, improve it
- Proactive
- Fix it before it breaks
- Planned
- Strategic
- Align (Shared vision)
- Integration (Supply, Operations, Sales and Marketing)
- Differentiation (System Performance)
- Alliances

Performance
- Decaying
- Breakdowns
- Avoid Failures
- Uptime
- Inventing

Meet Budget
- Decaying
- Responding
- Org. Discipline
- Org. Learning
- Inventing

Shifting culture from a maintenance focus to reliability focus
Eliminate scale residues from AP3

Before
- AP3 descaling ability clearly worse than comparable line AP1 with similar material feed and time frame
- Problem specially with 3-4 mm material
- Improvement potential found in annealing temperature, pickling and shot blasting

After
- Increased annealing temperature for <4 mm material, now same for all thicknesses
- New acid pumping rules with higher concentration targets
- Maintenance improvement to increase shot blasting wheel speed from 800 to 900 rpm

Control plan created for the process
Revised existing Standard Operating Procedure
Operators trained in new SOP

Breakthrough improvement by increasing shot blasting wheel speed

Scale base deviations at AP3 decreased from 6% in beginning of 2018 to less than 1%.
Melting: Standardize cast starting operations

**Before**
- Too fast mold filling
- Mold corner cap
- Too many iron chips
- Too short tundish heating time

**After**
- Min 30 s mold filling time
- Silicone seals the gap between the mold plates
- Reduced use of iron chips
- Min 55 min heating time

Starting breakouts reduced from 10 in 2017 to 0 in 2018.

- Revised the existing and create a new SOP
- Operators trained in new SOP
- Control plan created for the process

Breakouts now stabilised after control actions have been implemented.
Project management structure with visibility