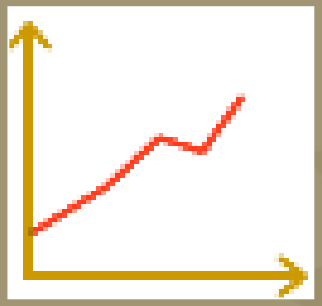


Omaintec 2017

Successful development of the maintenance function

v/ Tom Svantesson
CEO
TSMC Production and Maintenance Consultants ApS

TSMC
Production & Maintenance Consultants ApS
www.tsmc.dk

Introduction

- A case from the development of the maintenance function in a pharmaceutical facility
- Causes for a successful development

TSMC®
Production & Maintenance Consultants ApS
www.tsmc.dk

One Best Practice for the management of changes

- Establish a need for changes -“The Burning Platform”
- Leadership - ownership and a sponsor
- Stakeholders – from Production, IT and Quality
- Project management – Skills, Communication and knowledge
- Education and Training
- “Keep It Simple” and plan the changes in small steps
- Process discipline
- Project brief – problem and possible solutions

TSMC®
Production & Maintenance Consultants ApS
www.tsmc.dk

Starting point for the development

- Assets commissioned approx. 30 years ago
- An increase in the regulatory requirements since the time of commission
  – “Raising of the quality bar”
- A risk averse engineering organisation
- Not updated or missing asset documentation

TSMC®
Production & Maintenance Consultants ApS
www.tsmc.dk

Symptoms initiating the development process

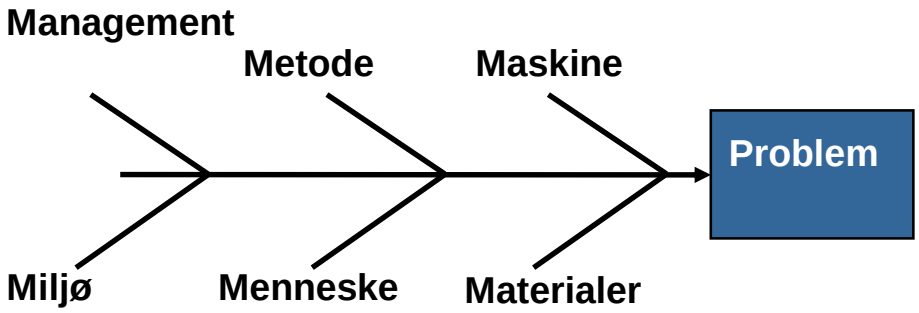
- Reliability was a challenge - and capacity requirement from the market was increasing
- Obsolete equipment + 30y
- Increase in the number of quality deviation reports (NCs)

Analysis of the current state

- Reliability was a perceived challenge - not a real challenge. The operators time was the constraint
- Manufacturing activities was organised in sequence as opposed to be organised in parallel
- Preventive Maintenance Plans was not aligned with the failure modes
- Preventive Maintenance instructions was unprecise or missing
- Requirements to the assets were increased – caused by product change (Corrosivity!)
- Low level of reinvestment/Capital maintenance since time of commissioning

Causes

- Root Cause analysis seldom got to the real root cause



- Knowledge of failure patterns and maintenance strategies was limited – Predominantly relying og OEMs recommendations for Preventive Maintenance
- Lack of up to date documentation as the foundation for any change or asset upgrade

Project activities

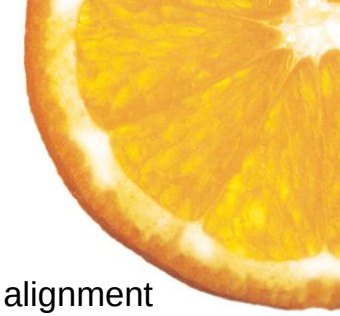
- Introduction of simple FMECA for the development of new maintenance strategies
- Preventive Maintenance tasks aligned to expected and recorded failures
- Standard Operation Procedure for the maintenance activities was revised. Maintenance strategy decision section added to the SOP
- Quality deviation reports (NCs) was analysed to identify or confirm the root cause
- Template for the assessment of the condition of the production and utility assets.
  Used to identify and prioritise reinvestment projects
- Introduction of Maintenance Guidelines for frequent types of equipment (Valves, pumps)

TSMC®
Production & Maintenance Consultants ApS
www.tsmc.dk

Results

- Revised SOP for the management of the maintenance activities approved by the Quality Department
- 10 maintenance guidelines developed for typical equipment
- A process for the assessment of the asset condition
- 40 maintenance technicians, support personal and quality staff trained in the FMECA method and maintenance strategies
- Risk based assessment of 18 assets and 5000 components
- 500 Maintenance plans revised in the sites CMMS
- A reduction in the Quality deviation reports (NCs) caused by asset failures
- A request from other sites in the company to use the risk based maintenance planning process
- And mostly: An common acceptance of the level of the current status

Activities for success



- "Burning platform"
  A general understanding of the current work practices were inadequate and not in alignment with the business Best Practices and the company's standard practices.

- "Leadership focus and sponsor"
  The improvement process was anchored at the level of a vice president having the vision and also the decision power to prioritise and to allocate resources – and require results
- "Stakeholders"
  Production, IT and Quality department was involved
- "Project management"
  The project manager was the former department manager with the status, the responsibilities for budgets and prioritisation. The project manager had also the decision power to manage suggested scope creeps and the management of resources.
- "Education, Training and Coaching"
  Since new strategies and processes was introduced, the operators and the technicians needed training and education and also the needed follow up coaching to perform the analysis for the new maintenance strategies or the asset assessment. The training and education was based on the "Learning by doing". The coaching is still going on after the project is formally closed. This is an important step to support the culture change moving from reactive to proactive mode.
- "Keep It Simple"
  Realising the gap from the current level to the required level was a major leap, all the tools was developed with focus on simplicity as opposed to be perfect. This was a deliberate strategy to engage the technicians and the operators.
- "Process disciplines" The revision of the SOP gave the processes and the organisation was working according to the processes outlined in the SOP

TSMC®
Production & Maintenance Consultants ApS
www.tsmc.dk

Differentiators for success - in this case

- “Project leader”

  Recognised high status for the project manager
  Decision power for: Budgets, Prioritisation, Scope creeps and man hours

- “Education, Training and Coaching”

  Education and Training and follow up coaching in Maintenance planning and Root Cause Analysis up to 1 year after the project closure.

- “Keep It Simple”

  All the tools and procedures was developed with focus on simplicity as opposed to be perfect. This was a deliberate strategy to engage the technicians and the operators.

TSMC®
Production & Maintenance Consultants ApS
www.tsmc.dk

Thanks for your attention!

Question and comments?

ts@tsmc.dk
www.tsmc.dk

Production & Maintenance Consultants ApS
www.tsmc.dk