Case Study: When Does It Pay To Use RCM?

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RCM 2009

- At the conclusion of this presentation you will have an understanding of the success you can achieve in developing or re-developing a preventive maintenance program using the Reliability Centered Maintenance (RCM) Methodology.

Case Study

- Background Information:
  - Large Paper Product Manufacturing Facility
  - Current Production Goal 75%
  - Current Production Rate 63% (-12%)
  - Current PM schedule 10 hours every 4 weeks
  - Maintenance posture: Reactive
  - Operator Involvement: Minimal

RCM Selection

- Change has to be made to stay competitive.
- Selected machine on the following:
  - Excessive downtime (maintenance and production)
  - Product upgrades for 2009
  - Multiple like machines – easy to change PMs indentified form the process to multiple machines

Cross-Functional Team

- Team Composition
  - Senior Operator
  - Electrical & Instrument Technician
  - Mechanical Maintenance Technician
  - Niche Mechanic
  - Reliability Technician
  - Reliability Engineer
  - RCM Facilitator

Resources

- Resources Used:
  - Copy of all current PMs being performed
  - Process & Instrumentation Drawings
  - CMMS equipment download
  - Equipment History:
    - Parts purchased against cost center
    - Production log (for last 18 months)
  - Dedicated meeting location:
    - All personnel scheduled for the project

Day 1

- Kick-off meeting the Plant Manager and Management Team (Why?)
- Team Introduction
- Identify Priority of Work
- Assign responsibilities
- Start the process

Day 1 Results

- Frustration
- Headaches
- Confusion
- Sarcasm
- Threatening the “Status Quo”
- No vision to the benefit of change

Day 2

- Remnants of Day 1
- Change : This PM doesn’t make sense!
- Individual vision created
- Culture change was starting to take place
- The pieces of the puzzle were starting to come together

Day 2 Results

- Peace
- Teamwork to accomplish better PMs
- Team asking the right questions
- Operation and Maintenance Venture

Day 3 - 6

- Completed RCM process on machine
- As new or changed PMs were identified; updates were made immediately in CMMS.
- A new process in developing qualitative and quantitative PMs was born.
- Results incorporated in identical systems

Overall Results in PM Changes

RCM Roll-up	
40 Original PM's	% Changed
23 PMs RTF	58% Change
17 PMs Changed (Task/Frequency)	43% Change
26 New PMs	65% Change
RCM Process Identified a total 43 New or Changed PMs	

Financial Impact

- Prior PM schedule was every 4 weeks at 8hrs.
- Resulting in 104 total PM hours annually.
- Post RCM PM schedule was 94 total PM hours annually.
- Frequencies were changed due to the process and we were able to give production back 6 hours of production a quarter; 24 hours a year.
- This resulted in $140k in gained production. Spread this across eight machines that is over $1MM in gained production annually.

Conclusion

- By applying the RCM process to your maintenance methodology you can make significant impacts with small projects.
- Not every system is going to require an RCM analysis.
- Understand the process and implement the recommended changes.
- Document your progress and make the case to “Change the Culture” of your organization.

Questions?