Society of Manufacturing Engineers (SME)
Lean and Green Symposium at EASTEC
May 2009

O/E Learning Presents…

Using Safety To Drive Lean Implementation

Phil La Duke

Introduction

- Housekeeping
- Introductions

What Is Lean Manufacturing?

- Gaining competitive advantage through greater efficiency in management and production systems.
- A philosophy not a bureaucracy
- A strategy for improving organizational efficiency to peak levels.
- An active effort for eliminating process waste.
- Operations Excellence.

What is Safety?

- Eliminating the failure modes that injure workers
- Eliminating the waste associated with worker injury
- Lowering operating costs by eliminating the money spent on hurting workers.

Tools for Achieving Lean Operations

- Elimination of Waste
- Equipment Reliability
- Process Capability
- Continuous Flow
- Error Proofing
- Stop the Line Quality System
- Standard Work
- Visual Management
- In-Station Process Control

Elimination of Waste

- Injuries are **waste**.
- The costs associated with worker injury have been driven up as sharply as healthcare costs overall.
- Reduced injuries = reduced costs.

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Equipment Reliability

- Incident Investigation often identifies unreliable equipment that leads to worker injuries.
- A good TPM system can not only improve equipment reliability, but also reduce worker injuries.

Process Capability

- Injuries directly contribute to downtime.
  Time is lost through:
  - Interruption of production as the worker stops working to respond to his or her injury.
  - Interruption of production as first responders leave their jobs to treat the injured worker.
  - Time lost in investigation.
- Injuries indirectly contribute to downtime.
  Time is lost through:
  - Inexperienced workers replacing the injured worker and working at a slower rate.
  - Turnover and absenteeism.

Continuous Flow

- Pull-system approach to production creates a more stable flow of materials that is generally a more ergonomic solution.
- A safer workplace can help reduce operator stress and fatigue.

Error Proofing & Problem Solving

- Should be implemented to prevent both defects AND injuries.
- Injury investigations are an excellent way to teach and internalize (hardwire) root cause analysis and problem solving

Stop the Line Quality (Safety) System

- Even the most vocal opponent to lean manufacturing should agree that workers must be empowered to stop production not only when they see a defect but also when they see a safety issue.
- Andon Systems can be modified to include visual warning lights when a hazard has been identified.

Standard Work

- Job Safety Analysis can be used to create SWIs
- Safety Inspections can also be a valuable tool in verifying and updating SWIs
- SWIs are invaluable in incident investigation.

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Visual Management

- Establish safety Quality Operating System (QOS) report card
- Track meaningful safety metrics
- Manage safety using data
- The extent to which Lean tools have been implemented is an important leading indicator
- 5S and Kanban are intrinsically tied to safety

In-Station Process Control

- Training in all safety aspects of the job
- All workers are empowered to identify and act on abnormal or "near hit" conditions within their work areas that may result in injury

Use Safety to Drive Organizational Change

- Safety is difficult to argue against.
- Using a structured approach to safety has spillover benefits to other disciplines.
- Many of the actions taken to make the workplace safer also make it leaner and more productive.

Conclusion

- Internalize Lean, don't institutionalize it
- Safety, quality, and production are intrinsically linked.
- Safety represents a vast, untapped source for cost reduction.
- http://www.osha.gov/SLTC/etools/safetyhealth/mod1_estimating_costs.html
- Questions?

Thank You!

Phil La Duke
Director, Performance Improvement
O/E
2125 Butterfield, Suite 300 N
Troy, MI 48084
248-860-1086
www.safety-impact.com