ANSI B 11 Technical Report #7 (B11.TR 7 - 2007)
By: Lean and Safe Network

Title: Designing for Safety and Lean Manufacturing: A guide on integrating safety and lean manufacturing principles when utilizing machinery

Background

- Lean manufacturing concepts are being employed by many different businesses with a goal of becoming more productive.
- Numerous companies and industry groups are working with the ANSI B11 Accredited Standards Committee to integrate safety and lean into manufacturing operations.

Problem Statement

- Some production operations are lean but still have unacceptably high risk, especially maintenance work
- Other operations are very safe but are cumbersome to work with and not lean
- Companies need an approach to achieve system and equipment designs that simultaneously have acceptable risks and minimum waste
- To develop such an approach requires top executives actively lead~~ing~~ a culture change for both hourly and salaried personnel in their organization

Contents of this technical report include (currently 58 pages)

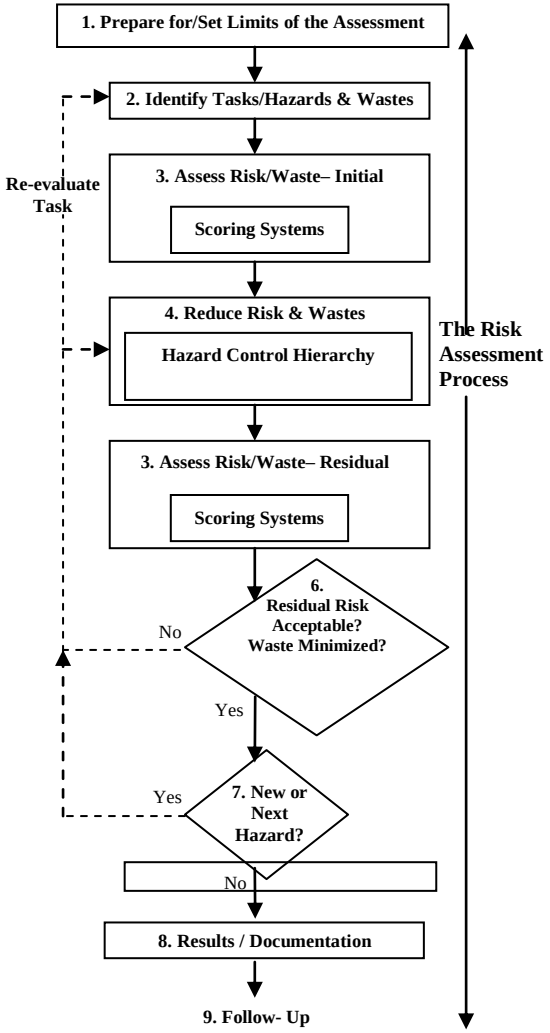
- Introduction
- Scope
- References
- Definitions
- Overview of Lean Concepts
- Challenges and Examples
- Safety and Lean Solutions
- Overview of the Risk Assessment Process
- Examples of Safety and Lean Successes
- Considerations for Safety and Lean Design
- Summary
- Annex

Lean

- Many people hear the term "Lean" but have little understanding of its meaning.
  1. "Lean" has **two fundamentals Identify waste** **2. Eliminate waste**
- The 7 forms of waste are 1) Correction, 2) Over-production, 3) Motion, 4) Material Movement, 5) Waiting, 6) Inventory and 7) Process

ANSI B 11 Technical Report #7 provides an integrated risk assessment where the seven forms of waste are identified during hazard identification.

- Risks are mitigated while waste is minimized
- The process creates a balanced approach resulting in acceptable risk with minimized waste



Benefits of Lean and Safe

- **Cultural changes occur with demonstrated involvement of top management**
- Productive operations have **acceptable risk with minimized waste**
- **Less wait time and bureaucracy**
- **Reduced floor space and inventory**
- **Visually attractive environment**
- Increased **productivity and quality** / easy to maintain systems
- **Reduced lead time and cost**
- Culture of **problem solving and continuous improvement**
- **Enables sustainable growth and being "green"**
- **Improved communications with employees**

Current State

- **ANSI B11.TR. – 2007 is being revised. Major changes include:**
  - Expansion to include lean, green and safe
    - Clarification of how this links to sustainable growth
  - Expansion to be "machinery, not just machine tools
  - Greater focus on leadership and organizational culture
- For more information, please contact:
  - The secretariat for ANSI B 11 standards and technical reports, Association for Mfg. Technology (see www.amtonline.org), or
  - The Lean and Safe Network – send an email to leanjourney@charter.net