SSM 112: Decision Making using Statistical Process Control

Introduction

Most statistical process control (SPC) training focuses on methods rather than execution and strategy skills. The focus of this course is not on basic SPC tools, but rather on how to use these tools to the best advantage. This course will maintain an instructional format with a blend of lectures, workshops, and practice problem sessions. As a result of this course, participants will acquire a good understanding of how to apply or refine SPC efforts.

Objectives

- Learn how SPC reduces operating costs
- Improve productivity with proper SPC implementation
- Continue long-term quality improvements
- Reduce scrap and rework with SPC
- Strengthen marketing efforts

Who should attend?

Production-level workers, technicians and anyone else who seeks a basic understanding of SPC.

Prerequisites: No prior background in statistics is required. Participants should bring a hand calculator for problem solving.

Course Outline

• Introduction to SPC

• Data Collection

• Problem Solving Techniques – Critical Thinking, Brainstorming, Flowcharts, Fishbone

• Fundamental Statistical Concepts – Measurements of central tendency and variability

• Descriptive Analysis of Data
  o Pareto, Histogram
  o Scatter Plot
  o Run Chart
  o Pseudo Control Chart

- Control Charts for Variables Data
  - o Average/Range charts
  - o Average/Standard Deviation charts
  - o Average/Moving-Range/Sigma charts
  - o Run Tests
  - o Individuals Charts

- Control Charts for Attributes
  - o P Charts
  - o Np Charts
  - o C Charts
  - o U Charts

- Preparing and Analyzing Charts

- Process Capability
  - o Capability Ratio – Cr
  - o Performance Ratio – Pr
  - o Capability Index - Cp
  - o Performance Index – Pp
  - o Process Capability - CpK
  - o Process Performance - Ppk