

Introductory SPC Training

Workshop for Effective SPC Implementation

Workshop Description

This one-day, instructor-led workshop introduces the concepts of applied statistics, including statistical process control (SPC) and statistical quality control (SQC). Participants will learn how to identify, when to use, and how to interpret common statistical charts. No calculators are required!

Workshop Purpose

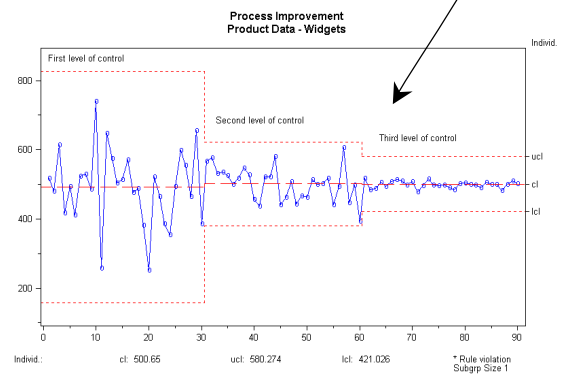
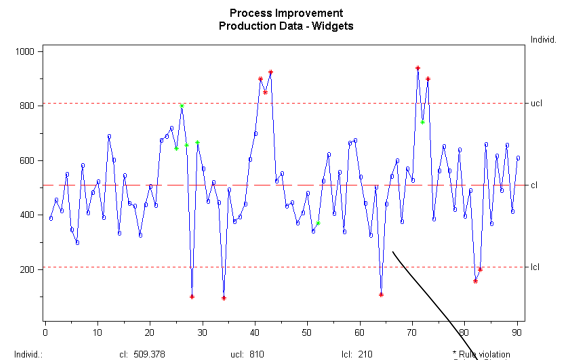
This workshop introduces basic statistical techniques used to make decisions about any type of process. It is designed to provide a foundation for participants who are implementing statistical process control and/or statistical quality control.

Workshop Prerequisites

No previous SPC training is required for this workshop. Note that this workshop, or a similar statistical background, is recommended as a prerequisite for the Quality Analyst™, Quality Monitor™, SPCx™, and Wonderware QI Analyst™ product training workshops.

Objectives

- Review the differences between SPC and SQC and discuss their benefits in the manufacturing environment.
- Discuss the history of SPC and its impact on process improvement.
- Introduce statistical terminology.
- Teach how attribute and variable data affect the application of statistics.
- Introduce common quantitative charts, when to use them, and how to interpret them.
- Teach the relationship between run charts and control charts, and histograms and process capability histograms.
- Demonstrate how SPC can be applied to any process, whether it's the factory floor, the quality control laboratory, or the front office.
- Prepare the participant for training on NWA® SPCx, Quality Monitor, and/or Quality Analyst.
- Prepare the participant for training on intermediate and advanced SPC topics.



Workshop Itinerary

Introduction

Introduce the differences between SPC and SQC and discuss their benefits in the manufacturing environment. Describe the philosophy and discuss the cultural implications of SPC.

History

Examine the history and background of SPC and it's "inventor", Dr. Walter A. Shewhart.

SPC Terminology

Describe the terminology used in SPC: variable data, attribute data, mean, median, mode, variation, accuracy, precision, and GR&R.

Basic Charts

Teach the use and interpretation of basic statistical charts: tally sheets, Pareto diagrams, run charts, and trend analysis.

Control Charts

Introduce and discuss the use of attribute and variable control charts: p, np, I-MR, and X-R.

Histograms and Process Capability

Explain histograms and process capability calculations: Cp, Cpk. Review the voice of the process vs. voice of the customer. Examine normal distribution and skewness.

Correlations

Explore methods of determining the correlation between two sets of process data: correlation coefficient, scatter diagram, and linear regression.

Conclusion

Review the introductory topics of SPC. Provide for open discussion, questions, and answers. Introduce intermediate SPC topics.