

Statistical Process Control (SPC)

Statistical Process Control can be a cost effective and efficient technique for ensuring defect-free product and for reducing process variation and waste. It can also be a costly, non-value-added exercise if done improperly or if applied to the wrong product/process characteristics. This seminar will describe the basic concepts important for understanding SPC and the proper methods for developing and monitoring control charts.

Hours: 8 a.m. – 4 p.m.

Length: 2 days

Course Objectives

Participants will learn:

- The concepts of variation and process control
- How to determine where and which type of control charts should be used.
- How to develop a sampling plan.
- The steps needed to develop and deploy control charts
- How to use Minitab to perform statistical calculations.
- How to interpret control charts, and actions that should be taken, or not taken, based on the results.

Who Should Attend:

QA specialists, process engineers, supervisor, managers, production operators and others involved in developing, deploying and monitoring control charts.

Related Seminars:

- ISO 9001:2015
- IATF 16949
- Design FMEA
- Process FMEA
- APQP
- MSA

Seminar Content

SPC Applications

- Relationship with ISO 9001:2015 & IATF 16949
- Relationship with APQP
- The AIAG SPC Manual

Statistical Terms and Concepts

- What is SPC?
- Processes, Systems and Common and Special Cause Variation
- Measures of Central Tendency
- Measures of Variation

Understanding Variation

- Common and Assignable Cause Variation
- Statistical Control
- Control Charts
- Statistical vs. Specification Control
- The SPC Process

Variable Control Charts

- X-bar and R Charts
- Workshop
- X-bar and x Charts
- Individuals-Moving Range Charts

Determining Process Capability

- Product Validation/PPAP Requirements
- Process Capability Indices
- Determining Process Capability
- Workshop

Attribute Control Charts

- Attributes vs. Variables
- P Charts
- Workshop
- Np Charts
- c Charts
- u Charts

Sampling Theory

- Determining where Statistical Monitoring is Needed
- Sampling and Sub-grouping Principles
- Rational Sub-grouping
- Workshop

Interpretation of Control Charts

- Out of Control Signals
- Trends
- Reaction Plans
- Tampering
- Workshop



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