ASSOCIATION CONNECTING ELECTRONICS INDUSTRIES®

IPC-9199

Statistical Process Control (SPC) Quality Rating

Developed by the Statistical Process Control Subcommittee (7-22) of the Process Control Management Committee (7-20) of IPC

Users of this standard are encouraged to participate in the development of future revisions.

Contact:

IPC
2215 Sanders Road
Northbrook, Illinois
60062-6135
Tel 847 509.9700
Fax 847 509.9798

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1 SCOPE

This document is intended to be a tool for a customer or supplier organization's internal audit group to assess a statistical process control (SPC) system against the requirements of IPC-9191. This document should be used by customers and suppliers of any size and for any commodity. This document should be used by trained evaluators. This tool can be used to perform an assessment of the use of SPC at both organizational and process levels.

The questions in this evaluation form are based on the guidelines for SPC implementation given in IPC-9191. IPC-9191 was developed to reflect the principals of SPC represented by the International Organization for Standardization (ISO) Statistical Methods Technical Committee's document: ISO 11462-1. Auditors should also have a fundamental understanding of statistics and their application in manufacturing.

This audit tool should be scaled to each individual organization's unique situation and resources by using the not applicable (N/A) response in areas of this quality rating.

1.1 Objectives The purpose of IPC-9199 is to provide examples of SPC implementation evaluation forms that may be used by customers and suppliers. The use of these forms should be mutually agreed upon between customer and supplier.

1.2 Assessment Approach The IPC-9199 evaluation format is a systematic assessment of each guideline section from IPC-9191 (Sections 4, 5 and 6).

1.2.1 Section 4 – SPC Objectives and Organization This section evaluates management for the following:

- How management sets objectives for SPC and communicates the objectives to employees.
- Managements' approach to determining the financial impact of the SPC program.
- The level of implementation of SPC as determined by the percentage of product specifications controlled with SPC vs. Quality Conformance Inspections.

1.2.2 Section 5 – Conditions for Statistical Process Control This section is an evaluation of management's support for SPC, including an SPC training plan and quality system infrastructure.

1.2.3 Section 6 – Elements of a Statistical Process Control System This section evaluates twenty elements of a SPC System for an individual process or processes being assessed. Each of the sections has two assessments: Organizational and Process. The organizational assessment determines the scope of the organizational policy in ad-dressing the elements as defined by IPC-9191. The process assessment looks for evidence of implementation of each element at the process level.

1.2.4 Scoring Matrix Appendix A is an example scoring approach for an SPC system assessment. Each portion of Section 4 through Section 6 is assigned a specified number of points based on the total number of assessment areas shown. A percent completion is calculated based on the number of applicable elements verified as implemented on the process or processes under evaluation. The absolute score of an initial assessment should be used as a baseline. An organization or customer should set goals for continuous improvement of assessment scores.

2 APPLICABLE DOCUMENTS

The following documents form a part of this quality rating to the extent specified herein. Later issues of or amendments to these documents become part of this document unless otherwise stated. If a conflict arises, this document takes precedence.

2.1 IPC[1]

IPC-T-50 Terms and Definitions for Interconnecting and Packaging Electronics Circuits

IPC-9191 General Guidelines for Implementation of Statistical Process Control

1. www.ipc.org