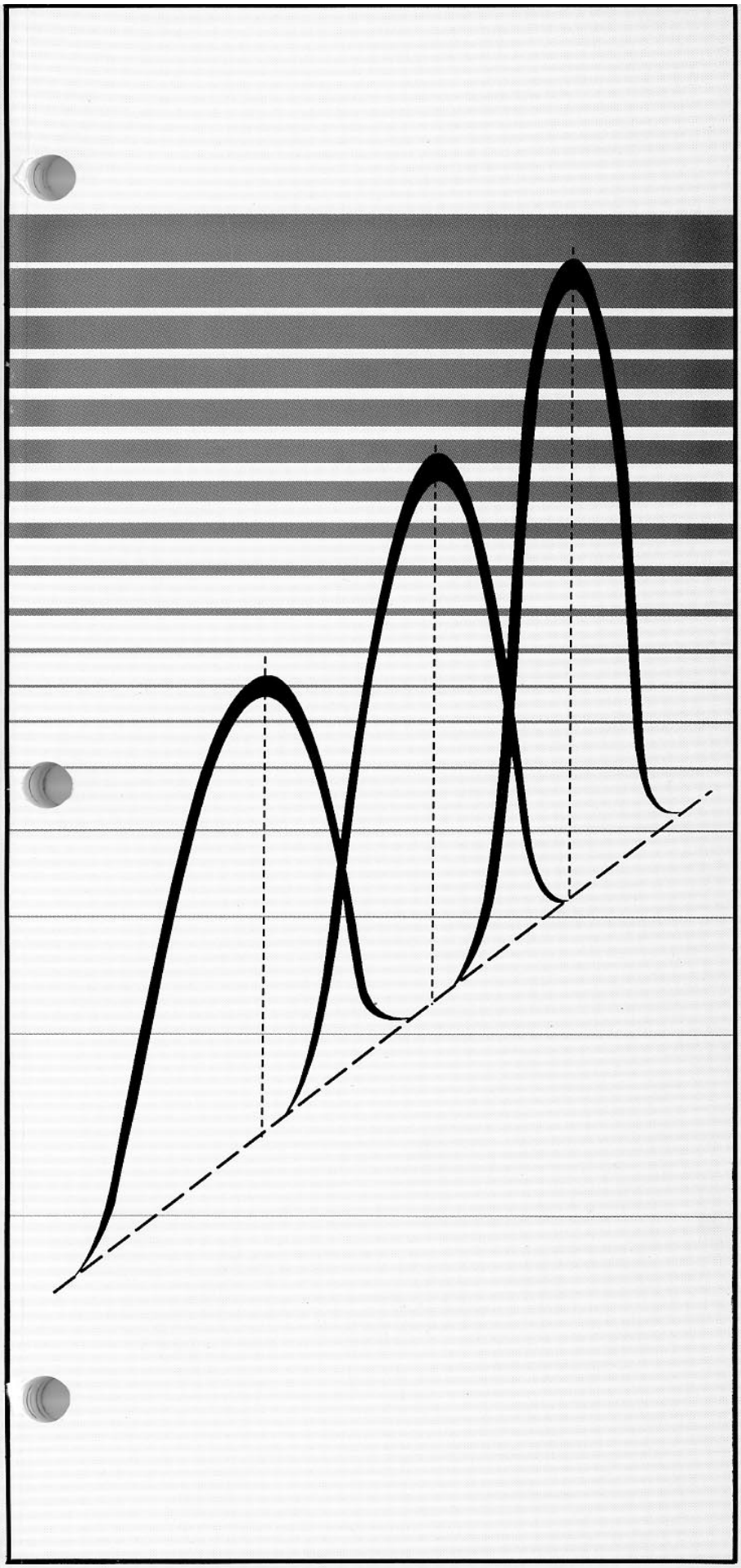

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General Requirements for Implementation of Statistical Process Control

Developed by the
INSTITUTE FOR INTERCONNECTING
AND PACKAGING ELECTRONIC CIRCUITS

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N.R. Watts.....Xetron
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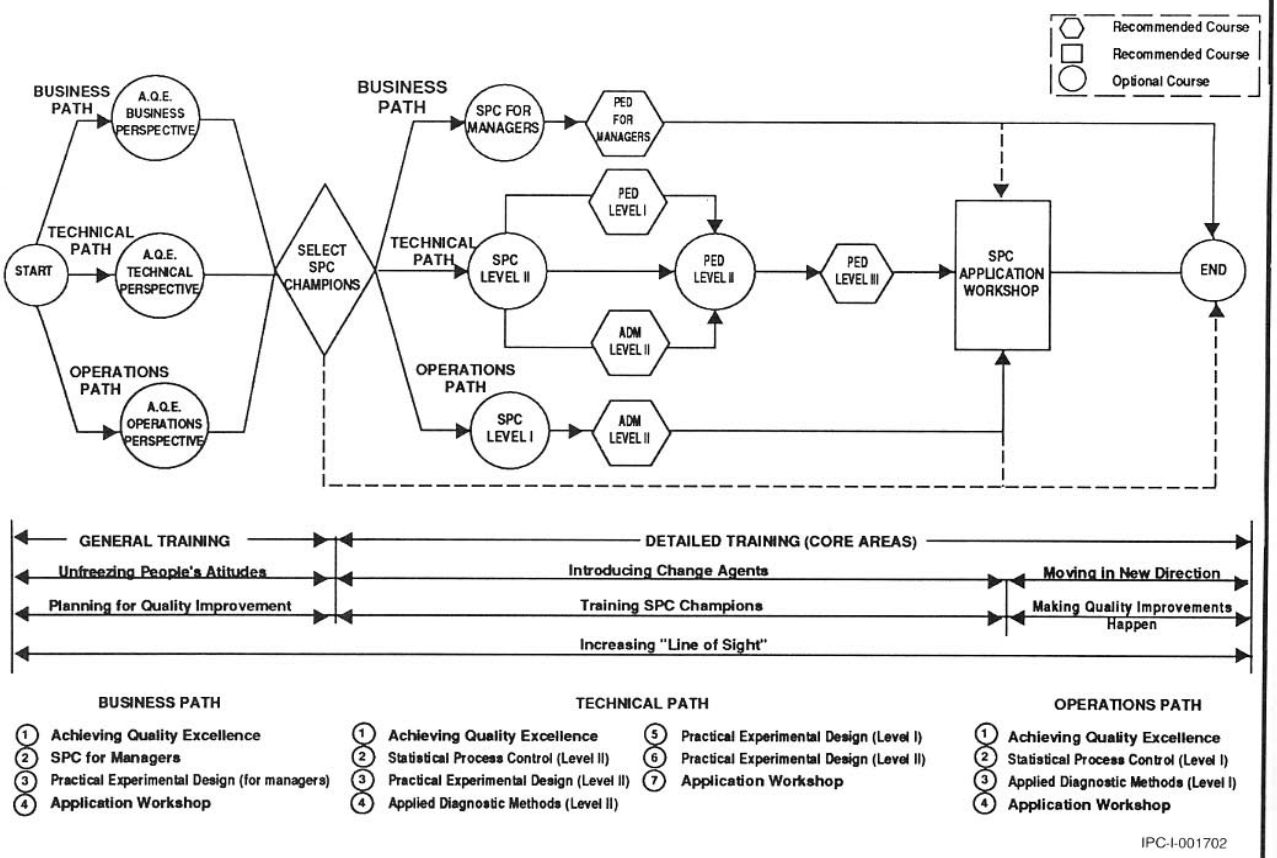
4.5.6 Examples



BUSINESS PATH

1. Achieving Quality Excellence
2. SPC for Managers
3. Practical Experimental Design (for managers)
4. Application Workshop

TECHNICAL PATH

1. Achieving Quality Excellence
2. Statistical Process Control (Level II)
3. Practical Experimental Design (Level II)
4. Applied Diagnostic Methods (Level II)
5. Practical Experimental Design (Level I)
6. Practical Experimental Design (Level II)
7. Application Workshop

OPERATIONS PATH

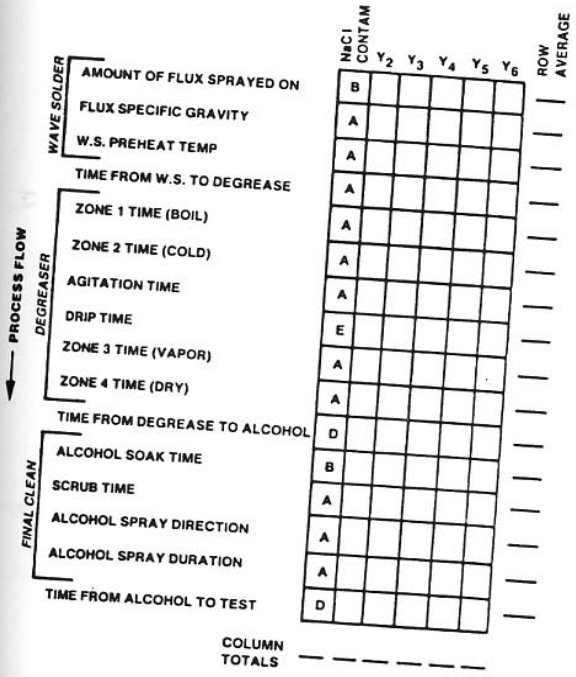
1. Achieving Quality Excellence
2. Statistical Process Control (Level I)
3. Applied Diagnostic Methods (Level I)
4. Application Workshop

IPC-I-001702

SPC training flow and implementation (Reprinted with permission, Ref. HARRY (1986))

9.2.6 Examples

The figures on this page are examples of cause-effect matrixes.



Rating Scale:

A—Very high importance in relation to the problem/response variable; likely to prove causal.
B—Important in relation to the problem/response variable; could prove causal.
C—Some concern in relation to the problem/response variable; might prove somewhat causal.
D—Little concern in relation to the problem/response variable; likely not to prove causal.
E—No concern in relation to the problem/response variable; should not prove causal.
F—Needs to be controlled during the conduct of the experiment.

Partially constructed Cause-and-Effect (C&E) matrix
(Reprinted with permission Ref. HARRY (1986)).

Effect:
Product Parameters
(Improvement Opportunities)

Cause: Process Parameters (Causal Variables)	Y_1	Y_2	Y_3	Y_4	Y_N
X_1	4	1	---	---	2
X_2	1	2	1	3	---
X_3	3	4	2	---	---
X_4	2	3	---	1	1
X_5	---	12	---	2	19

Note: The number in each box represents the "consensus based" rank order of each "X" with respect to the corresponding "Y"

IPC-I-002109

Fully constructed Cause-and-Effect (C&E) matrix of a generic nature ready for experimental verification
(Reprinted with permission Ref. HARRY (1986))