



TABLE OF CONTENTS

I. CERTIFICATION OVERVIEW	I-1	IV. PRODUCT & PROCESS DESIGN	IV-1
CQE BOK	I-6	A. QUALITY CHARACTERISTICS	IV-2
II. MANAGEMENT AND LEADERSHIP	II-1	B. DESIGN REVIEW	IV-6
A. QUALITY FOUNDATIONS	II-2	1. DFSS	IV-11
B. QUALITY MANAGEMENT SYSTEMS	II-22	2. QFD	IV-17
1. Strategic Planning	II-22	3. Robust Design	IV-20
2. Stakeholders	II-33	4. DFX	IV-28
3. Benchmarking	II-37	C. TECHNICAL DRAWINGS	IV-32
4. Project Management	II-40	1. GD&T Definitions	IV-55
5. Quality Information Systems	II-51	D. DESIGN VERIFICATION	IV-61
C. ASQ CODE OF ETHICS	II-55	E. RELIABILITY AND MAINTAINABILITY	IV-64
D. LEADERSHIP PRINCIPLES	II-57	1. Preventive Maintenance	IV-65
E. FACILITATION TECHNIQUES	II-78	2. R&M Indices	IV-69
F. COMMUNICATION SKILLS	II-88	3. Bathtub Curve	IV-79
G. CUSTOMER RELATIONS	II-95	4. Hazard Assessment Tools	IV-81
H. SUPPLIER MANAGEMENT	II-103	F. REFERENCES	IV-96
I. BARRIERS TO QUALITY IMPROVEMENT ..	II-111	V. PRODUCT & PROCESS CONTROL	V-1
J. REFERENCES	II-113	A. TOOLS	V-4
III. QUALITY SYSTEMS	III-1	1. Control Plans	V-7
A. QUALITY SYSTEM ELEMENTS	III-2	B. MATERIAL CONTROL	V-12
B. QUALITY SYSTEM DOCUMENTATION	III-8	1. Material Identification	V-12
C. QUALITY STANDARDS & GUIDELINES	III-19	2. Material Segregation	V-14
1. ISO 9001:2000	III-22	3. Classification of Defects	V-20
2. MBNQA / BNQP	III-31	4. MRB	V-21
D. QUALITY AUDITS	III-35	C. ACCEPTANCE SAMPLING	V-24
1. Audit Types	III-37	1. Sampling Concepts	V-24
2. Audit Components	III-44	2. Sampling Standards	V-43
E. COST OF QUALITY	III-52	3. Sampling Integrity	V-61
1. Quality Cost Categories	III-54	D. REFERENCES	V-63
2. Quality Cost Bases	III-60	VI. TESTING & MEASUREMENT	VI-1
F. QUALITY TRAINING	III-66	A. MEASUREMENT TOOLS	VI-2
1. Training Needs Assessment	III-68	B. DEFINITIONS	VI-38
2. Training Effectiveness	III-71	C. DESTRUCTIVE TESTS	VI-42
G. REFERENCES	III-73	D. NONDESTRUCTIVE TESTS	VI-46

E. METROLOGY	VI-64	X. STATISTICAL APPLICATIONS	X-1
F. MEASUREMENT SYSTEM ANALYSIS	VI-78	A. STATISTICAL PROCESS CONTROL	X-2
G. REFERENCES	VI-89	1. Objectives	X-2
VII. CONTROL & MANAGEMENT TOOLS	VII-1	2. Common Vs Special Causes	X-4
A. QUALITY CONTROL TOOLS	VII-2	3. Rational Subgrouping	X-8
1. Flow Charts	VII-6	4. Control Charts	X-11
2. Histograms	VII-11	5. Control Chart Analysis	X-37
3. Pareto Diagrams	VII-17	6. Pre-control Charts	X-46
B. MANAGEMENT & PLANNING TOOLS	VII-23	7. Short-run SPC	X-48
1. Affinity Diagrams	VII-24	B. CAPABILITY	X-53
2. Matrix Diagrams	VII-30	1. Capability Studies	X-53
3. Prioritization Matrices	VII-34	2. Performance Vs Specifications	X-56
4. Activity Network Diagrams	VII-36	3. Capability Indices	X-64
C. REFERENCES	VII-38	4. Performance Indices	X-67
VIII. IMPROVEMENT TECHNIQUES	VIII-1	C. REFERENCES	X-68
A. IMPROVEMENT MODELS	VIII-2	XI. ADVANCED STATISTICS	XI-1
1. PDCA	VIII-3	A. STATISTICAL DECISIONS MAKING	XI-2
2. Six Sigma	VIII-6	1. Point Estimates	XI-3
3. Kaizen	VIII-11	2. Confidence Intervals	XI-4
4. Lean Techniques	VIII-12	3. Hypothesis Testing	XI-7
5. TQM	VIII-29	4. Paired Comparison Tests	XI-32
B. CORRECTIVE & PREVENTIVE ACTIONS ...	VIII-33	5. Goodness of Fit Tests	XI-39
1. Root Cause Analysis	VIII-42	6. Contingency Tables	XI-46
2. Mistake Proofing	VIII-44	B. ANALYSIS OF VARIANCE	XI-50
C. REFERENCES	VIII-46	C. RELATIONSHIPS BETWEEN VARIABLES	XI-60
IX. BASIC STATISTICS	IX-1	1. Linear Regression	XI-60
A. COLLECTING DATA	IX-2	2. Simple Linear Correlation	XI-70
1. Types of Data	IX-2	3. Time-series Analysis	XI-73
2. Measurement Scales	IX-7	D. DESIGN OF EXPERIMENTS	XI-74
3. Data Collection Methods	IX-9	1. Terminology	XI-76
4. Data Accuracy	IX-12	2. Planning Experiments	XI-86
5. Descriptive Statistics	IX-13	3. Block Experiments	XI-94
6. Graphical Relationships	IX-24	4. Full-factorial Experiments	XI-97
B. QUANTITATIVE CONCEPTS	IX-33	5. Fractional Factorials	XI-101
1. Statistical Conclusions	IX-35	6. Other Experiments	XI-108
2. Probability Terms	IX-37	E. REFERENCES	XI-116
C. PROBABILITY DISTRIBUTIONS	IX-46	XII. APPENDIX/INDEX	XII-1
1. Continuous Distributions	IX-46	A. ANSWERS	XII-31
2. Discrete Distributions	IX-61		
D. REFERENCES	IX-68		