



Certification for Construction Quality Managers

Presented by:

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ASQ Design and Construction Division



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TODAYS PRESENTATION

- Who We Are
- Quality issues in the industry
- Targeted uses of BOK
- Framework approach
- Timeline for development
- Next steps
- Comments & feedback



Who We Are

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- **American Society for Quality (ASQ)**
 - About 90K members world wide
 - Includes local sections and industry related divisions
 - Focused on Quality Practices and processes
 - Owner of several quality certifications (CQM, CQA, CQE)
 - Malcolm Baldrige sponsor
 - World Conference on Quality and Improvement, May 18-20th, Minneapolis, MN (DCD Focused on Sustainability & Quality)

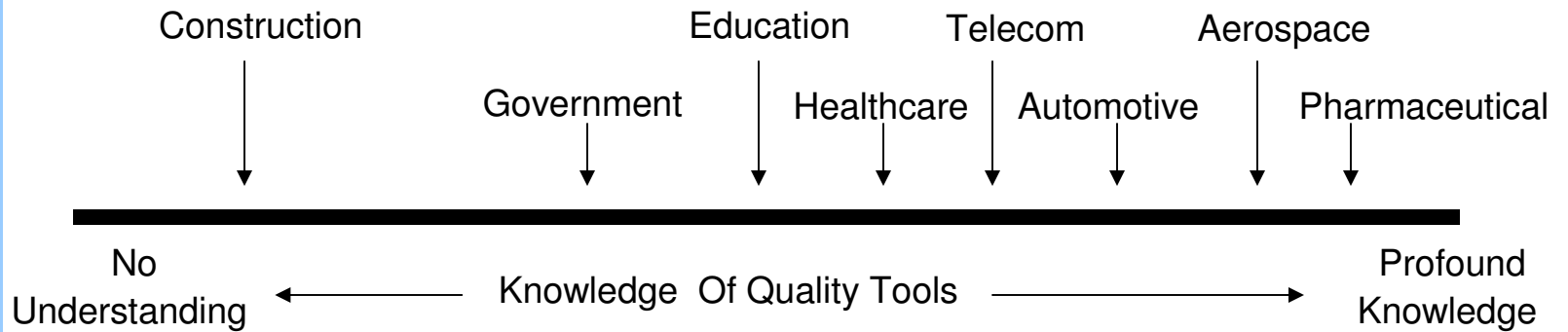
- **Design and Construction Division (DCD)**
 - About 1000 members from various companies and agencies
 - Five major sub-committees
 - Two major Body of Knowledge/certification efforts



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WHAT IS THE GENERAL LEVEL OF UNDERSTANDING OF QUALITY MANAGEMENT WITHIN THE INDUSTRY?



Totally Subjective Rating !



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DOES THE INDUSTRY HAVE QUALITY ISSUES ?

- ❑ Costly Replacement Of Deteriorated Infrastructure
Interstate bridges falling apart



- ❑ Greater Diversification & Education of the workforce
- ❑ Aging “Craftsmen” workforce



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DOES THE INDUSTRY HAVE QUALITY ISSUES ?

Changing materials and methods

New Methods

- Design Build
- PPP
- BIM
- Lasers, GPS
- Off-shore material supply
- Modular pre-fabrication

New Materials

- Wood – micro laminates
- Concrete – strength enhancing additives
- Steel – carbon fiber reinforcing
- Masonry – light weight structures
- Glass – low E – reduced thermal conductivity



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TARGETED USE FOR BODY OF KNOWLEDGE

Construction Industry Markets

- Transportation
 - Highway
 - Rail
 - Bridges
 - Tunnels
- Residential Housing
- Power
- Water
- Government



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TARGET USE FOR BODY OF KNOWLEDGE

- ❑ Looking to offer support to other industry related Certification programs...



Associated Builders
and Contractors





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BOK FRAMEWORK

□ Section 1 – Company/Agency Quality Management Topics

- History
- Quality Planning
- ISO 9000
- Customer Satisfaction
- Professional Ethics
- Quality Challenges

□ Section 2 – Testing and Inspection Quality Topics

- Lab Standards
- Inspection and Test Plans
- Inspector Qualifications
- Non-conforming Work
- Work Acceptance

□ Section 3 – Production Quality Management Topics

- Drawings & Specifications
- Documented Standards
- Workmanship Standards
- Statistical Process Control



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Section 1 – Company/Agency Quality Management Topics

History of Construction Quality

- Craftsmen
- Profession Certification
- Building Materials
- Adoption of Non-traditional Methods



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Section 1 – Company/Agency Quality Management Topics

Professional Ethics

- ASQ Code of Ethics
- Professional Engineering Code of Ethics
- Company Code of Ethics
- Sarbanes Oxley
- Legal Liabilities



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FRAMEWORK APPROACH

- ❑ Section 1 – Company/Agency Quality Management Topics
 - History
 - Corporate Quality Plans
 - ISO 9000
 - Customer Satisfaction
 - Professional Ethics
 - Design Quality Challenges

- ❑ Section 2 – Testing and Inspection Quality Topics
 - Lab Standards
 - Inspection and Test Plans
 - Inspector Qualifications
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 - Work Acceptance

- ❑ Section 3 – Production Quality Management Topics
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Section 2 – Testing and Inspection Quality

Inspection and Test Plans

- Inspection / Witness Points
- Accessibility / Timing
 - Concrete Preplacement
 - Piping Hydrostatic Tests
 - Plumbing and Septic System Installation
 - Final Inspection
 - System and Functional Tests





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Section 2 – Testing and Inspection Quality

Inspector Qualifications

- Welding (AWS)
- Nondestructive Testing (ASQ)
- Mechanical (ASQ)
- Concrete (ACI)
- State Required Standards & Certifications
- Local Required Standards & Certifications





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Section 2 – Testing and Inspection Quality

Nonconforming Conditions

- Condition / Disposition
- Minor vs. Major
- Repair / Rework / Use-as-is / Scrap
- Corrective Action
 - Fix Noted Condition
 - Prevent reoccurrence
- Audits



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Section 3 - Production Quality Management

Drawings and Specifications

- Quality defined Tests, Products and Tolerances
- Drawing defined Notes, Details, and Dimensions
- Reference Documents
 - Building Codes
 - Permits
- Submittals





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Section 3 - Production Quality Management

Workmanship Standards

- Company Training Responsibility
- Work Instructions or Operating Manuals
- Calibration Requirements
- Construction Tolerances
- Unions

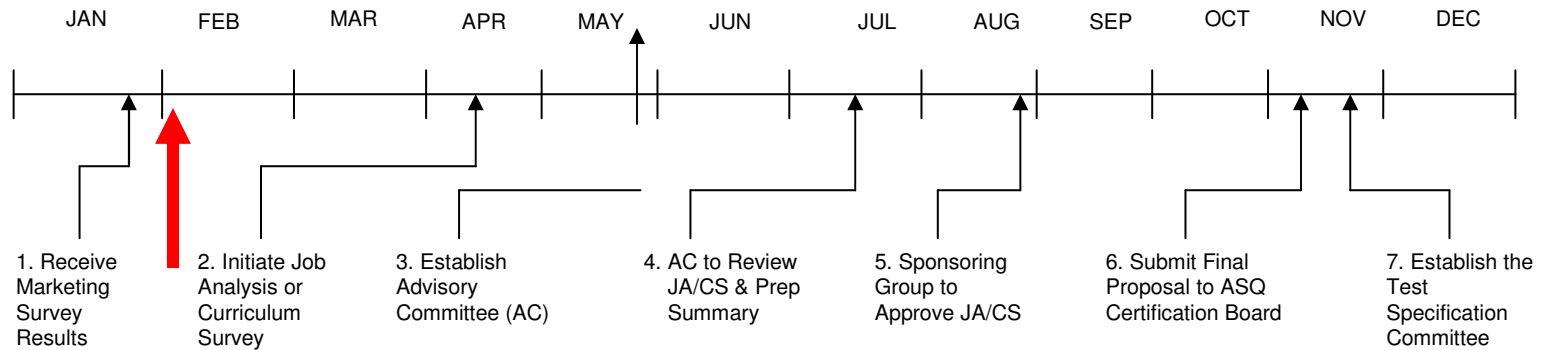




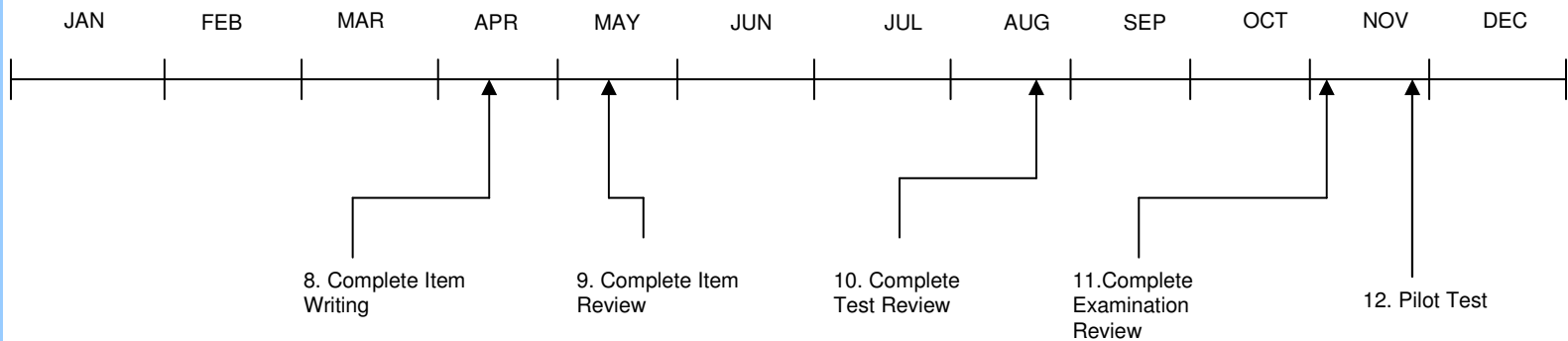
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TIMELINE FOR DEVELOPMENT

2009



2010





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NEXT STEPS...

- Capture feedback on Body of Knowledge**
- Capture interest in Certification**
- Establish industry certification contacts**
- Conduct Job Analysis**
- Establish Test Committee**
- Complete Test Writing**
- Conduct Pilot Test**



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Questions & Comments ...

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