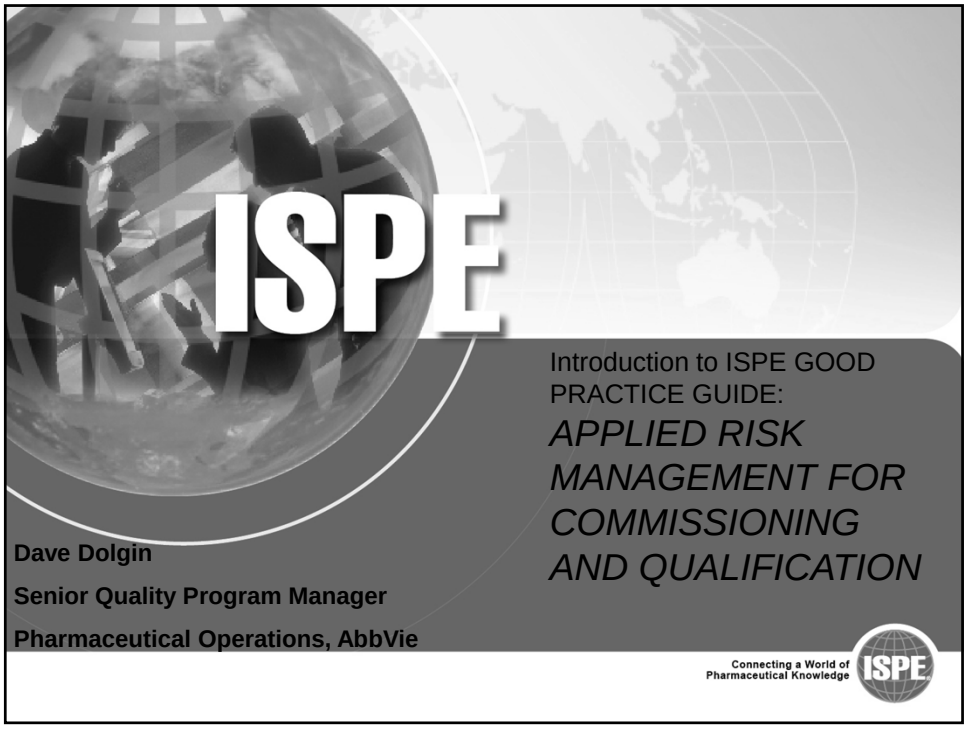


# Agenda

- Background
- Introduction and Overview of ISPE Good Practice Guide: "*Applied Risk Management for Commissioning and Qualification*"
- GPG Content Overview

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## History of "*Applied Risk Management for C&Q"*

- 2008 Tampa Meeting - Direction to develop a GPG supporting transitions from traditional practices provided by ISPE Technical Documents Steering Committee and assigned to C&Q CoP Steering Committee. Block and Dolgin co-leaders.
- 2010 Annual Meeting - "Rev. B" (first complete) draft submitted to C&Q CoP task team and TDSC
- December 2010 – Draft distributed for select industry review
- Washington 2011 – Task team review of response to comments
- Summer 2011 – Final draft rewrites and completion
- October 2011 – "ARM for C&Q" published

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## FSE Guide *and* a GPG?

We just heard about the new guide;

"*Science and Risk-Based Approach for the Delivery of Facility Systems and Equipment " (FSE)* published in June 2011

Why is ISPE also issuing a new Good Practice Guide on Risk Management for C&Q too?

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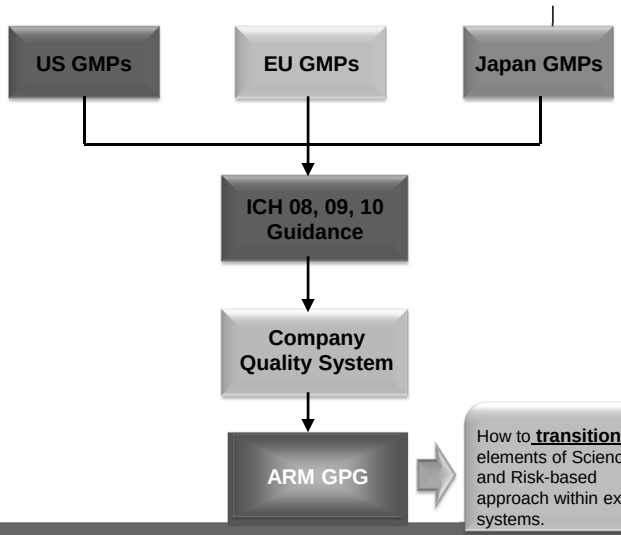
## Relationship of the GPG to cGMP and Company QMS




## FSE / GPG Comparison

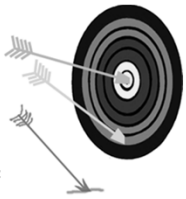
**FSE Guide**

- Direct implementation
- Verification terminology
- ASTM E 2500 roles / responsibilities in place

**C&Q GPG**

- Transitional approaches
- Traditional C&Q terminology
- Organizational transition based on maturity

## Primary Objectives of the C&Q GPG



- Describe the application of Quality Risk Management to traditional C&Q practices
- Link the traditional terminology of C&Q (as per BG5) to the Verification terminology of BG12 / ASTM E 2500
- Outline bridging strategies for organizations with well-established Qualification-based Quality Systems and legacy FSE with document histories
- Provide a “roadmap” for the spectrum of potential approaches from BG5 to the FSE Guide, ASTM E 2500 and ICH Q9

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## ARM for C&Q GPG as a “Bridge”


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## Rationale for Transitional Strategies

- "Traditional" language embedded in Quality Systems
- Costs of document change and historical libraries
- Practical need for classification systems
- QRM approach has pre-requisites
- Organizations need to get ready to be successful – but also need to continue to do business
- Purely traditional approaches becoming non-compliant as well as non-cost-competitive

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## Transitional Questions

- How do you define new Roles & Responsibilities within existing organizational structures?
- How do you establish / integrate Good Engineering Practices (GEPs)?
- How do you develop process requirements (PUR) for older processes lacking formal development documentation?
- What are appropriate documentation standards for commissioning work leveraged for Qualification?
- How do you comply with non-risk-based Quality System requirements and still obtain maximum value?
- How do you apply risk-based approaches to the lifecycle management of legacy (existing) systems?

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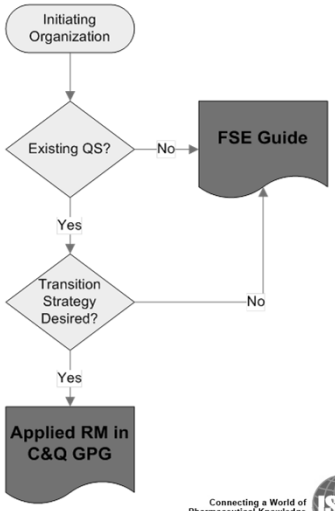
# Decision Guide to Guides

FSE Guide for Organizations:

- With new or flexible Quality Systems
- Without significant legacy terminology / mechanisms
- Organizationally capable

C&Q GPG for Organizations:

- Established Quality Systems
- Embedded terminology
- Traditional culture
- Developing organizational maturity curve

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# ARM in C&Q GPG Overview

| Chapters | Titles |
|---|---|
| 1 | Introduction |
| 2 | Fundamentals of Applied Risk Mgmt for C&Q |
| 3 | Operation and Continuous Improvement |
| 4 | Supporting Practices |
| 5 | Quality Risk Management |
| 6 | Cost Control and Process Performance |
| 7 | Applications and Considerations for Specialty Facilities |

App.1 – Developing Appropriate U-Requirements
App.2 – C&Q Plans
App.3 – Organizational Maturity Model
App.4 – Commissioning
App.5 – References
App.6 – Glossary

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## Fundamental Topics

- C&Q Process Overview and Prerequisites
- C&Q Process Flow
- Quality Unit Approval
- Qualification – Suitability for Intended Use
- Process User Requirements
- Specification and Design
- C&Q Planning
- Commissioning
- Guidelines for Turn-Over-Packages
- Qualification
- Process Performance Qualification (PPQ or PV)
- Acceptance and Release

## Operation/Continuous Improvement Topics

- Legacy System Life Cycle Flow
- Objectives of Science-and-Risk-Based Life Cycles
- Maintenance, Calibration and Continued Suitability for Use
- Continued Verification
- Change Management and Continuous Improvement for Existing Qualified Systems
- Transitioning Strategies for Legacy Systems
- Legacy Automation Systems

## Supporting Practices

- Transitional Approaches for C&Q Quality Systems
- Engineering Quality Systems
- Roles and Responsibilities in a Risk-Based Process
- Verification Documentation Practices
- Supplier Issues and Uses of Supplier Documentation

## Quality Risk Management

- Significance of ICH Q9
- General QRM Process
- Quality Risks
- The Role of QRM for C&Q
- Assessment of Quality Risks
- Control of Quality Risks
- Quality Risk Assessment Tools
- Human Heuristics and Affect on Risk Assessment
- Risk Assessment Transition Strategies

## Cost Control and Process Performance

- C&Q Transitional Activities Impacting Costs
- C&Q Cost Definition
- C&Q Cost Controls
- C&Q Efficiency
- C&Q Process Quality

## Applications and Considerations for Specialty Facilities

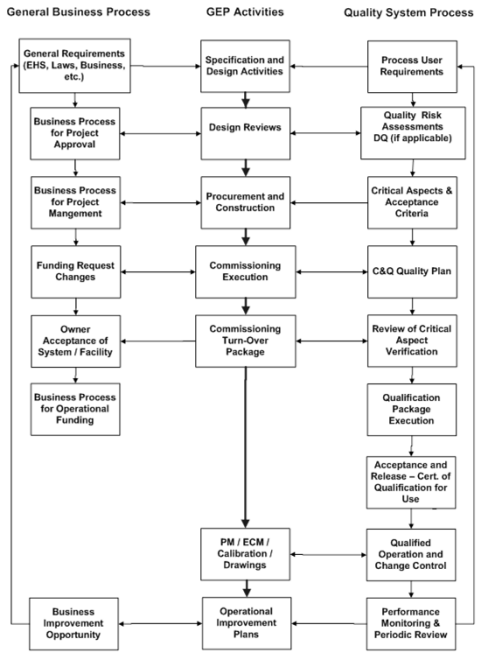
- Identification of Risks
- C&Q Requirements for Specialty Facilities
- Contract Manufacturing/Packaging Facilities
- Warehouse Facilities

# Appendices

1. Developing Appropriate User Requirements
   - Process vs. General Requirements
   - Critical Aspects vs. Process Requirements
   - Identification and Documentation of Critical Aspects
2. C&Q Plans
   - Objectives and Contents
3. Organizational Maturity Model
   - Example model to assess organizational readiness and strategy
4. Commissioning
   - Shared content with FSE Guide
5. References
6. Glossary

# ARM GPG Core Task Team

| Name | Affiliation |
|---|---|
| Nicholas Andreopoulos | Pfizer |
| Joerg Block | Bayer HealthCare AG |
| Nuala Calnan | Dublin Institute of Technology |
| Vincent Cebular | IPS |
| Robert Chew | Commissioning Agents |
| Peter Werner Christensen | NNE Phamaplan A/S |
| Kimberly Dahmen | Abbott |
| David Dolgin | Abbott |
| Rose Mary Dollard | Johnson & Johnson |
| Daniel Franklin | IPS |
| Matthew Hamm | Eli Lilly |
| Timothy Howard | Commissioning Agents |
| Angela McCarthy | GlaxoSmithKline |
| Matthew McMenamin | GlaxoSmithKline |
| Armen Nahabedian | Pfizer |
| Ryan Stewart | GlaxoSmithKline |
| Guy Wingate | GlaxoSmithKline |
| Steven Wisniewski | Commissioning Agents |




## GPG Risk-Based C&Q Process

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## GPG Quality Unit Approval Points

1. Process User Requirements
2. Quality Risk Assessments
3. Critical Aspects and Acceptance Criteria
4. C&Q Plans
5. Qualification Summary Reports
6. Acceptance and Release

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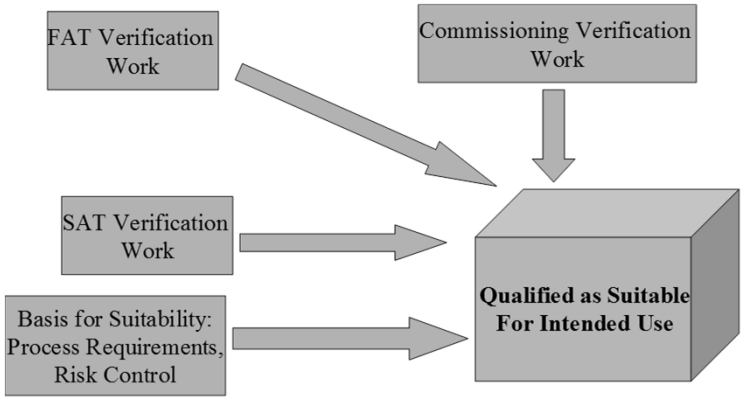
# Documented Evidence of Suitability

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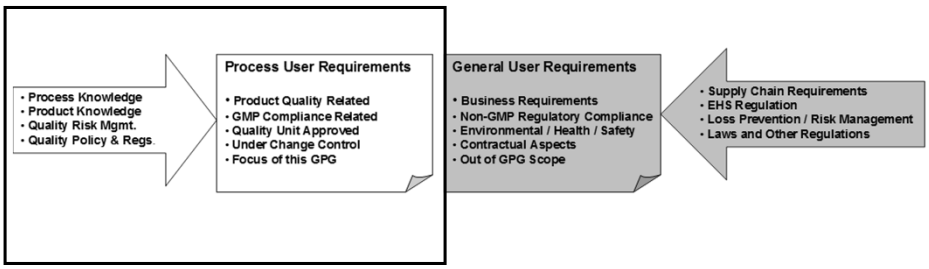
# User Requirements – Basis of Suitability

**Quality Requirements**

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# PURs vs. Critical Aspects

| PURS… | CRITICAL ASPECTS… |
|---|---|
| Are "process" based, linked to support of CPPs and CQAs | Are facility or system based, linked to prevention, mitigation or detection of quality risks, risks to PURs |
| Are the "what" a system must do or provide in order to assure that product meets all applicable specifications | Are "how" a system will meet or support the applicable PURs |
| Can and must be identified by users and associated SMEs and are best determined using a multi-disciplinary review based on science and process knowledge | Are typically identified or designed by Engineering SMEs in accordance with Good Engineering Practices (GEPs) and are best determined through risk assessment (formal or informal) |
| Validated as part of PQ or PV<br><br>Quality unit should be involved in development and must be included in approval, typically as part of a VRB, and documented in a standalone URS, DQ, or other VRB approved format | Qualified through a program of physical and functional verification<br>Are developed as part of the engineering design and must be listed along with acceptance (design) criteria in some Quality unit/VRB approved format (C&Q Plan, DQ, IQ/OQ protocols, etc.) |
| Are generally "fixed" by the process, and not typically subject to frequent or significant changes once approved (change control required for already approved PURs) | May be iterative and change as designs and/or control strategies are developed and modified (change control required for already approved Critical Aspects and associated criteria) |

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# Risk Assessment at the Site Level

**Product Process Risk Assessment and Control Strategy**

Same Everywhere Process is Run

Manufacturing Risk Assessment Site A

Manufacturing Risk Assessment Site B

Site specific manufacturing conditions and control strategies considering:

- Batch Size (scale)
- Equipment
- Facility
- Utilities
- Infrastructure
- Environment
- Personnel

**Site Level C/Q/V Considerations**

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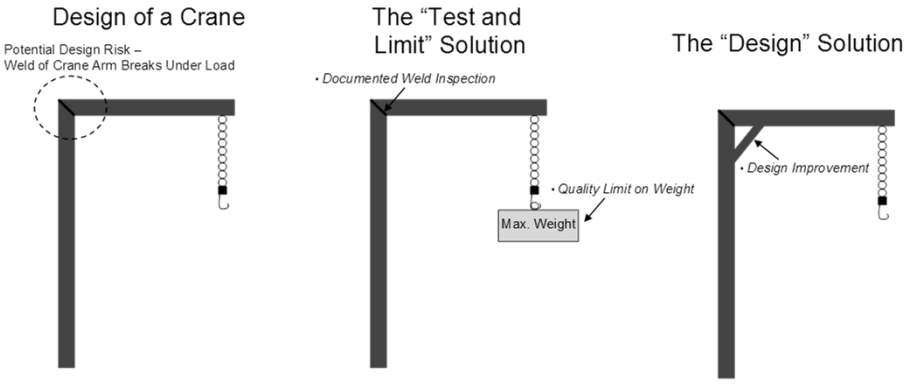
## Quality by Design – Not Just for Products

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## Human Heuristics in Risk Assessment

- Defined as: "Cognitive behaviors that can influence how individuals make judgments in the face of uncertainty"
- Represents a seriously underestimated issue in pharmaceutical industry use of risk assessment
- **<u>Bottom line message</u>:**

**Can't use risk-based approaches unless we can effectively and consistently estimate risk – there is more to this then just 5 people sitting down to do an FMEA – if we don't get better at risk assessment as a science, regulators are going to help us**

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## In Summary…

- ARM for C&Q GPG describes strategies for transitioning from traditional BG5 approaches to Q9 and ASTM E 2500 risk-based methodologies
- RBAs can be win-win-win-win; cheaper, faster, more compliant, better product quality for patients
- Can't just flip a switch – organizational capabilities are a prerequisite
- Cost/Value equation different for all firms – choose your path
- Doing nothing is a decision too

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## Questions ?

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# Thank You!

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