Equipment & Vendor Qualification

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Production Assistance for Cellular Therapies
National Heart Lung and Blood Program

Equipment Qualification

- What is it?
- What is Involved?
- When is it Done?`

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Qualification

- Performed to

  "Establish confidence that process equipment & ancillary systems are capable of consistently operating within established limits & tolerances"

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Validation

- The purpose of validation is

  "to that user needs and intended uses can be fulfilled on a consistent basis"

- It is "confirmation by examination and provision of objective evidence that specified requirements for a particular device or activity have been met"

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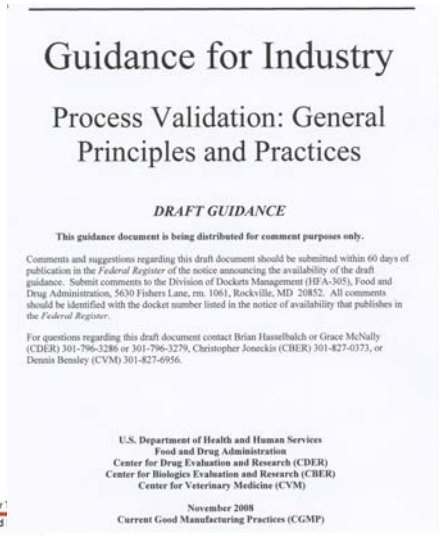
Validation

Helpful Information



Guidance for Industry

Process Validation: General Principles and Practices

DRAFT GUIDANCE

This guidance document is being distributed for comment purposes only.

Comments and suggestions regarding this draft document should be submitted within 60 days of publication in the *Federal Register* of the notice announcing the availability of the draft guidance. Submit comments to the Division of Dockets Management (HFA-305), Food and Drug Administration, 5630 Fishers Lane, rm. 1061, Rockville, MD 20852. All comments should be identified with the docket number listed in the notice of availability that publishes in the *Federal Register*.

For questions regarding this draft document contact Brian Hasselbalch or Grace McNally (CDER) 301-796-3286 or 301-796-3279, Christopher Joneckis (CBER) 301-827-0373, or Dennis Bensley (CVM) 301-827-6956.

U.S. Department of Health and Human Services
Food and Drug Administration
Center for Drug Evaluation and Research (CDER)
Center for Biologics Evaluation and Research (CBER)
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Current Good Manufacturing Practices (CGMP)

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Components of Equipment Qualification

- Design Qualification (DQ)
- Installation Qualification (IQ)
- Operational Qualification (OQ)
- Performance Qualification (PQ)
- Requalification (RQ)

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Design Qualification

- Pre-sets the specifications required for equipment
  - Performed prior to purchase
  - Describes the features required for the equipment
  - Outlines the decision process used to select the equipment

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Design Qualification Considerations

- Capabilities (e.g. speed, capacity & temperature for a centrifuge)
- Requirements (e.g. voltage, size limitations, operational specifications, requirement to work with existing instruments)
- Features (e.g. ease of cleaning PC interface, self calibrating, service contracts)
- May result in sole source availability – usually requires justification

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Design Qualification

- Indicate the requirements the equipment must meet
  - Equipment description *e.g. Centrifuge*
  - Specifications
    - Electrical
    - Tolerances/Performance
    - Maintenance/Cleaning
    - Other
  - Reasons for selection of this Model
  - Individual responsible for this selection

Installation Qualification

Documents

- When and where received
- Condition upon receipt
- Complete order received?
- Transportation to site of use
- Unpacking

Installation Qualification

Documents

- Installation (by whom, where, when)
- Start up (self check etc.)
- Calibration and cleaning
- SOP for maintenance and use?

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Installation Qualification

- Date of Delivery
- Order complete?
- Manual received? (hardcopy/electronic)
- Location for Installation
- Meets manufacturer's specifications (Temp/Voltage etc.)
- Name of Installer
- Power up worked (Yes/No/N/A)
- Self check passed (Yes/No/N/A)
- Service/Calibration plan established (Details)
- Other
- Individual completing this section

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Operational Qualification

oQ

- Does the equipment function as described by manufacturer?
- Confused with Validation
- OQ for a centrifuge
  - Does the centrifuge turn on and off
  - Spin at programmed speed & temperature
  - Brake as set
  - Retain programming

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Operational Qualification

oQ

- Describe specifications to be tested
  - Accuracy of settings, maintenance of temperature etc.
- Has the equipment been calibrated?
  - By whom (Attach calibration documents)
- Has an SOP been written?
  - If no, then must be done before equipment put into use
- Individual completing this section

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Performance Qualification pQ

- Does the equipment function correctly and consistently for the intended application
- Analogous to Validation but here the emphasis is on whether a piece of equipment rather than a process is working appropriately

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Performance Qualification pQ

For critical pieces of equipment it may be necessary to perform a Performance Qualification to ensure that it will function properly when used in a specific manufacturing procedure.

Does this equipment require Performance Qualification (Check with Quality Assurance)

If No, turn in completed forms and attachments to Quality Assurance for review

If Yes, proceed to Performance Qualification page of the worksheet

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Performance Qualification pQ

Provide evidence that the equipment is performing as expected when used in a manufacturing procedure.

The PQ will be performed using

Mock product(s)

Clinical materials intended for therapeutic use.

*This requires **pre**-approval from QA, the patient's physician and a Laboratory Medical Director.*

Describe safeguards to be taken to protect patient in case of a manufacturing failure.

The proposed Performance Qualification is pre-approved for use on clinical materials: Signed:_____

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Performance Qualification pQ

- Centrifuge performance qualification
  - Does the use of this centrifuge in this procedure (e.g. density gradient separation) produce the expected results based on:
    - Previous results with other centrifuges
    - Published results on the same procedure
    - Results using same procedure at other sites
    - Results from the manufacturer

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Performance Qualification pQ

- PQ plan submitted to QA for pre-approval
- Describes
  - Procedure to be performed
  - Parameters for determining success
  - Allowable tolerances
  - Data to be collected
  - Analysis of data to be performed
- The results are submitted to QA to determine if acceptable for final qualification of equipment

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Requalification rQ

- Determine necessity in consultation with QA
  - After any incident that may affect equipment performance
    - After equipment repair
    - After equipment upgrade or service
    - After equipment is moved
    - After facility incident – power surge, closure etc.
    - If equipment is to be used in new way

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Vendor Qualification

- Documentation that the vendor is able to provide materials that consistently meet pre-established specifications
- Requires development of specifications for the material to be provided
- May be partially addressed in IND application
- Should focus initially on critical materials for cell product manufacturing

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Supply Specifications

- List of required properties for the material
  - Grade – USP
  - Sterility – CFR
  - Endotoxin
  - pH
  - Physical properties
  - Packaging – volume, container etc.
  - Formulation
  - Cost range

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Supply Specifications

- Determine whether
  - Commercially pre-available – catalog search – may require vendor & lot pre-screening
  - Will need to be custom manufactured
- Will determine type of qualification process – vendor / manufacturer
- Manufacturer qualification potentially more complex – material sourcing, manufacturing processes etc.

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Vendor Audit

- On-site – expensive but may combine with other trip
  - Materials management and screening
  - SOPs for manufacturing & testing
  - Staff training
  - Document management
  - Quality programs – control, assurance, quality certifications
  - FDA inspections – outcomes
  - Product recalls

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Vendor Audit

- Questionnaire or survey (annual)
  - Send printed questionnaire covering same areas to Vendor's Quality Department
  - Alternatively use Survey Monkey
- Keep short and simple if you want a reply!
- Opportunity for a community-based standard audit system

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Product Testing

- Standardized or randomized testing of incoming material by customer
  - Simple: sterility, endotoxin, pH etc.
  - Complex: chemical analysis to confirm composition
- Need follow-up mechanism in case of issues, recalls, complaints

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Equipment Qualification Summary

- Evidence that equipment operates consistently within established limits
- Performed in stages
  - Design
  - Installation
  - Operation
  - Performance
  - Requalification
- Information evaluated independently by QA

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Vendor Qualification Summary

- Evidence that a vendor is able to provide materials consistently meeting pre-established specifications
- Performed in stages
  - Determine critical materials
  - Establish material specifications
  - Source Vendor
  - Audit vendor
  - Audit material(s)
  - Establish follow-up procedures
- Information evaluated independently by QA

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Thank You
Mahalo
Kiitos
Tack
Toda
Thanks
Grazie
Obrigado
Takk
Merci
Gracias
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