QUALIFICATION PROGRAM

Sourcing and Qualifications Unit
DSCC-VQ

OUTLINE

- Information briefing on Qualification Program
  - ✓Background – What is Qualification?
  - ✓ What we do - “The Qualification Process”
  - ✓ Benefits
  - ✓ Web Site
  - ✓ Conclusion

Qualification

- Process of qualifying a manufacturer's products prior to and independent of a contract award

Scope

- World Wide Program – World Wide Impact
- Over 900 manufacturers participate
- More than 75 test labs

SCOPE

- Large program covering wide variety of technologies
- Electronics covers 22 types of components including:

Capacitors
Resistors
Connectors
Tubes
Switches
Relays
Microcircuits
- Hybrid
- Custom
Discrete Solid State
- Transistors
- Diodes

Many component families contain special quality/reliability level requirements for space applications; e.g. microcircuits, discretes, capacitors, resistors, relays, etc.

Qualification Process
(Four Major Steps To Remember)

Technical audit of manufacturers plant

– Certification

- Qualification testing (technical data)
- Product approval
- Build and maintain relationship with manufacturer to ensure continued performance, quality and reliability

Technical Audit/Validation
(Step # 1)

- Certify manufacturer (i.e. approve manufacturer's process and quality system – not the product)
- Audit team composition dependent on technology, requirements and number of lines/plants:
  - ✓ Typically two (2) engineers for 5 days
  - ✓ Audit teams may be made up of military service and industry experts (e.g. radiation)
  - ✓ Customers invited to attend

Technical Audit/Validation Continued

- Verify product design and baseline
- Verify product qualification and testing requirements meet the specification and standards
- Support Areas:
  - ✓**Incoming Inspection**
  - ✓**Document control**
  - ✓**Training**
  - ✓**Calibration Lab**
  - ✓ **Field failures**
  - ✓ **Records/test results**
  - ✓ **Statistical Process Control**
  - ✓ **Self Audit**

Technical Audit/Validation Continued

Complex technical qualification audit of product design, manufacturing and testing. Assure repeatability exists via baselines, flows, and travelers during audit.

Audit Corrective Actions

- Provide manufacturer a list of discrepancies
- All must be isolated and corrected before proceeding with Qualification Process

Manufacturer must be “Certified” prior to proceeding with Qualification Process

Qualification Process
(Four Major Steps to Remember)

- Technical Audit of Manufacturer's plant (Certification)

  Qualification Testing (technical data)
- Product approval (QPL/QML)
- Build and maintain relationship with manufacturer to ensure continued performance, quality and reliability

Qualification Testing
(Step # 2)

- Product built on the “Certified” production line using approved product baselines and manufacturer’s flows
- Product subjected to all prescribed qualification tests
- All Qualification data submitted to DSCC-VQ

  Part proven before they are used

Qualification Process

(Four Major Steps to Remember)

- Technical Audit of Manufacturer's plant (Certification)
- Qualification Testing (technical data)

  Product approval (QPL/QML)
- Build and maintain relationship with manufacturer to ensure continued performance, quality and reliability

QPL/QML
(Step # 3)

- Test report and data reviewed
- Products passing military specification qualification testing are listed on applicable QPL/QML

Shopping list for Military, OEMs (Govt/Commercial) and other Agencies--Worldwide.

Qualification Process

(Four Major Steps to Remember)

- Technical Audit of Manufacturer's plant (Certification)
- Qualification Testing (technical data)
- Product approval (QPL/QML)

Build and maintain relationship with manufacturer to ensure continued conformance, quality and reliability

Working Relationship
(Step # 4)

- Validate screening and periodic QCI testing
- Periodic Reaudits
  - ✓ Typically 2-5 year cycle
- Product failures are reported
  - ✓ Can shut down lines until problems are fixed if need be
- Configuration Control - Product redesigns, mfg. flows, test travelers changes are evaluated. (Baselines, travelers, flows updated). Re-qualification testing required as appropriate
- Review annual retention reports (good way to catch fraud)

Suppliers of Qualified Product

- Be sure product being supplied is actually qualified product
  - ✓ **Manufactured/assembled by source listed on QPL/QML**
- Able to trace product back to listed source
- Able to supply proper documentation to verify origin of product
- Some specifications and/or contracts may require such documentation

Qualification Benefits Everyone

Establishes level playing field/ “known good supplier” list

Demonstrated capability to meet the requirements

- Validates continual adherence (design rules, process flow, tests)
- Lower life cycle cost, shorter lead times
- Improves quality and reliability
- Configuration management
- $200M fraud settlements

Bottomline

- Mfg. must be approved for listing on QPL/QML before being awarded a contract calling for a qualified part
- Other suppliers of qualified product must assure and be able to document that the product originated from an approved and listed source
- "But Parts are Parts"? **WRONG!**
  - ✓ Can't just substitute another grade of part for a qualified part
- Qualified parts are built and tested for military applications and the performance, quality and reliability are validated

DSCC-VQ Home Page

Sourcing and Qualifications Unit

- Sourcing and Qualifications Unit Web Site
- http://www.dscc.dla.mil/programs/qmlqpl
- Download QMLs, QPLs, Commercial Laboratory Listing, etc. in .pdf Format
- Online Part Search for QMLs and QPLs
- General Information on Commodities, ISO-9000, and Laboratories

VQ POC LISTING

- **VQ - (614) 692-0677**
- **VQC - Microcircuits - Custom/Standard**
  (614) 692-0662
- **VQH - Microcircuits – Hybrid**
  (614) 692-0663
- **VQE - Discrete Semiconductors, Printed Wiring Boards, Electron Tubes, Antenna, Hardware**
  (614) 692-0621
- **VQP - Passive Components, Connectors, Fiber Optics, Switches, Relays, Hose and Assemblies**
  (614) 692-0619