Global Supplier Quality Process

Table of Contents

1. PURPOSE 2
1. APPLICABILITY 2
2. OWNERSHIP AND APPROVAL 2
2.1. Communications 2
2.2. Purchased Products and Product Related Services 3
3. PRODUCTION PART & PROCESS QUALIFICATION REQUIREMENTS 3
3.1. PPAP Submission Requirements 3
3.2. Shipment Approval 3
4. CHANGE MANAGEMENT 4
4.1. Supplier Change, Deviation Request (SCDR) 4
4.2. Unauthorized Changes to Product 5
5. PROCESS CERTIFICATION 6
5.1. Requirements 6
5.2. Key Characteristic (KC) (see section 13 for all definitions) 6
6. NON-CONFORMING PRODUCT 7
6.1. Supplier Identified Non-Conforming Product (SDR) 7
6.2. CCR Identified Non-Conforming Product 8
6.3. Supplier Non-Conformance/Corrective Action Reports and Requirements (SCAR) 9
6.4. CONTROLLED SHIPMENT (CS) 9
6.1. Key Expectations for Controlled Shipping 11
6.2. Criteria to exit from CS1 controlled Shipping 11
6.3. Non-Conforming Material Disposition at CCR Factories 11
7. REFERENCE MATERIALS 12
8. REVISION/REVIEW UPDATES 12
APPENDIX 1 13
APPENDIX 2 17
APPENDIX 3 20

Global Supplier Quality Process

1. PURPOSE

All products must satisfy Carrier Commercial Refrigeration's (then CCR) test and quality standards, meet applicable industry quality and performance standards, comply with all applicable legal and regulatory requirements, and be merchantable and fit for the purpose intended by CCR. Supplier agrees to support and adhere to CCR required quality processes on an ongoing basis.

1. APPLICABILITY

This Supplier Quality Manual applies to all suppliers that provide production and service material, deliverable software, supplier designed products which are incorporated into a CCR assembly/product, finished goods branded by CCR and product related services to CCR facilities. The SQM also applies to internal suppliers within CCR (i.e., CCR owned suppliers and Joint Ventures (JV's). Individual CCR plants may have additional plant-specific requirements and will establish specific processes for carrying out these requirements. If a conflict exists between the requirements presented in this manual and individual plant requirement, the more stringent requirements will apply.

2. OWNERSHIP AND APPROVAL

The CCR Global Quality Lead, is the owner of this standard work instruction. All interpretations and changes require prior approval of the owner.

2.1. Communications

In general, the following contact points should be used:

Primary Contact – For all issues regarding supply chain and procurement, contact your buyer.

Product/Part Quality – For all issues regarding product quality, product safety, or regulatory, contact CCR plant(s) Buyer and Supplier Quality Engineer (SQE) at the using CCR site.

Ethics concerns – CCR maintains a contact site for suppliers who have questions or issues related to the CCR Code of Conduct. The site can be accessed through the link on the CCR.com homepage.

2.2. Purchased Products and Product Related Services

Purchased products and related services shall comply with established specifications and requirements, including: according to QLY-57

3. PRODUCTION PART & PROCESS QUALIFICATION REQUIREMENTS

3.1. PPAP Submission Requirements

All production part sample submissions shall be in accordance with the system used by CCR which is the primary method for suppliers to upload documentation and receive approvals from CCR. PPAP submission should be made as far in advance of production start-up as possible, working to a date agreed to with the CCR plant / site.

3.2. Shipment Approval

Suppliers shall not ship production parts until a full or interim approval is received from CCR quality representative. PPAP requirement levels by commodity are according to QLY-57.

PPAP Warrant Validity

Unless otherwise specified on the PSW, approval is valid until there is a revision to the part or process or until revoked by CCR. Additionally, should one of the following conditions occur, the supplier must notify CCR *prior* to first production shipment:

- Correction of a discrepancy on a previously shipped part.
- Product modified by an engineering change to design records, specifications, or material on an approved PPAP.
- Use of an optional process or material other than was used in a previously approved part.
- Production from new or modified tools (except perishable tools), dies, molds, patterns, including additional or replacement tooling.
- Production following refurbishment or rearrangement of existing tooling or equipment.
- Production following any change in process or method of manufacture to include changes in lubricants, mold release agents, or other process solutions.
- Production from tooling and equipment transferred to a different plant location or from an additional plant location.

- Change of source for subcontracted parts, materials, or services (for example, heat treating, plating)
- Product re-released after the tooling and equipment have been inactive for volume production for 2 years.
- Any changes to software, firmware or any programing incorporated into the product sold directly to or through CCR.
- Following a CCR request to suspend shipment due to a supplier quality concern.
- Any other activity that will result in a change to the supplier's Control Plan (CP) if applicable.
- Loss or revocation of 3rd. party quality system registration

The supplier will utilize the system to notify CCR should any of the above events occur. The Supplier Change Deviation Request (SCDR) will be reviewed by CCR. ***Full or interim approval, in writing, must be granted prior to first production shipment.***

4. CHANGE MANAGEMENT

Supplier will not make any changes during the term of the order and shall not deviate from the approved product/process without prior written notification and approval from CCR. This requirement also applies to sub-tier suppliers. Supplier will provide CCR a minimum of six (6) months prior written notice of any intent to change or, check with your CCR Business Unit for any specific advance timing guidelines for change notification.

CCR may request additional time to complete qualification.

4.1. Supplier Change, Deviation Request (SCDR)

A deviation request is a temporary or short-term request to use product that departs from the design or process defined from the latest approved PPAP submission until permanent improvements, corrective actions, or a return to the approved PPAP condition takes place. Deviation requests must be recognized as an unfortunate necessity in situations that do not offer other alternatives. This type of change will have the affected quantity of parts, batch number, or serial number range declared on the SCDR form and will expire after such quantity, batch, or serial number is reached.

A permanent change is a result of systemic improvement made to the original approved PPAP condition to improve performance, quality, and/or reduce process variation. Example: changes in production equipment/tooling, critical sub-tier

suppliers, etc. Supplier shall submit SCDR package in advance to the CCR Supply Management contact according to the following:

- If a single CCR using site is affected, the SCDR will be submitted to the local purchasing contact.
- If more than one CCR using site is affected, the SCDR will be submitted to the responsible Category manager.

4.1.1. Deviation request

When a supplier identifies the need for a change or deviation, they shall complete a Supplier Change Deviation Request (SCDR) in the CCR Deviation Management application in Prism. Once the SCDR is submitted, SDR is routed to the CCR contact, according to the following:

- If a single CCR using site is affected, the SCDR will be routed to the Plant Quality Manager, who is assigned as an approver in the system. Plant quality will be the owner and has the authority to reject the deviation request. Note: If more than one CCR site is affected, then an SCDR will need to be submitted for each of those sites.
- If a supplier is unable to use the tool due to restrictions, CCR plant supplier quality is responsible for submitting the deviation in system on behalf of the supplier. Once the disposition is complete, plant supplier quality is to send the supplier a notification of the disposition.

Change or deviation requests shall not be used on safety related noncompliance, nor should it be used to cover up or replace the lack of proper quality systems or controls at the supplier location. CCR views excessive use of SCDRs for non-conforming material as an abuse and an indicator that a supplier may have a serious breakdown in their quality system.

4.2. Unauthorized Changes to Product

Shipment of any change/deviation request parts without written approval from CCR will be rejected and returned to the supplier at the supplier's expense. All additional incurred costs including, but not limited to, handling, shipping, and any impact to CCR Operations and/or customers will be the responsibility of the supplier.

In the event of any unauthorized changes to product without prior consent from CCR, CCR reserves the right to:

- report the issue to the supplier's designated management representative and/or ISO.
- require a new PPAP of other currently supplied components if needed.

5. PROCESS CERTIFICATION

Process Certification is CCR'smethodology to achieve and sustain statistically controlled and capable processes for manufacturing, business, support, maintenance, assembly, and test.

5.1. Requirements

Suppliers are required to implement it in their manufacturing processes to address all key characteristics defined by CCR. Suppliers will be requested to submit required data to CCR; specific requirements will be communicated through the assigned CCR Quality representative. Suppliers are encouraged to identify additional key characteristics beyond those defined by CCR. This should take into consideration, finished part characteristics, upstream product characteristics and process parameter controls.

- Suppliers with design responsibility MUST identify key characteristics in addition to any identified by CCR.
- All identified key characteristics (KC) must meet the process certification requirements, or other similar approved methodologies, as defined in Appendix 2 – Process Certification.

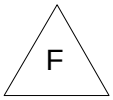
5.2. Key Characteristic (KC)

A key characteristic (KC) is any feature of a material, process, part, assembly, or test, whose variation within or outside the specified requirement has a significant influence on product fit, performance, service life, manufacturability, information, service, or other expected deliverable. CCR will define the key characteristics which the supplier needs to certify. Key Product Characteristics (KPC's) will be communicated through various methods, including:

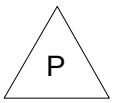
- Notations and/ or symbols documented on CCR engineering drawings and specifications.
- Written communication based on known process issues, production problems or field problems.

The various symbols used on CCR documents to signify KPC are shown below:

- **SAFETY**- A feature is classified as Critical to Safety if it creates a substantial risk of injury, property damage, illness, product damage, environmental damage, and or contamination, if not produced within its prescribed acceptance limits. If a supplier does not maintain milestone 4 for any safety KPC, they must be certified 100% for that characteristic.



- **FUNCTION**- A feature will be classified as Critical to Function if it can lead to significant reliability problems, performance issues or probable cause for rendering unit inoperable or not meeting customer requirements, and expectations if not produced within its prescribed acceptance limits.



- **PROCESS**- A product feature identified by manufacturing and determined to be of high risk due to number of producers or it's variation within prescribed limits has a significant impact on the ability of the part, component, unit, or options to meet fit, assembly, installation, or test requirements.

Additionally, some older drawings may contain other symbols to denote key characteristics. Refer to Appendix 2.

NOTE: KCs identified on the drawing / design documents using symbols X, F and P are called KPCs (Key Product Characteristics). Follow local process as well if design activity is available locally.

6. NON-CONFORMING PRODUCT

Non-conforming product is product that doesn't meet or fulfill its specified or defined requirements. A non-conformance can occur in both product and process. Under no circumstances shall a supplier ship non-conforming product without first receiving written authorization from CCR.

Suppliers must complete the corrective action issued by the plant to identify root cause and prevent future defects. Suppliers should reach out to their respective contacts at CCR's plants to learn more about escapes and how to report any discrepancies. The following sections identify and explain key quality requirements that are applicable for non-conforming product.

6.1. Supplier Identified Non-Conforming Product (SDR)

The supplier may find products, through their quality control processes or from reports by other customers, which were produced outside of specifications. The supplier is expected too immediately:

- Segregate these products and determine if this error may have occurred, undetected, in earlier production that may have been shipped to a CCR facility.
- Prior to shipping any non-conforming product, the supplier must notify CCR utilizing the Supplier Deviation Request (SDR) in the 8D System. Product may not be shipped until the SDR has been fully approved in the 8D system.
- Reasons for SDR include, but are not limited to:

- If the non-conformance affects form, fit, or function of the part or system.
- If the non-conforming product will affect deliveries to CCR.
- The supplier is responsible for the segregation and quarantine of non-conforming material. Non–Conforming materials shall not be shipped unless an SDR is approved by CCR. Non-Conforming product or materials received at CCR without an approved SDR will be rejected and returned to the supplier. Non-conforming material will not be processed until a deviation is approved by all required CCR personnel in the System.

6.2. CCR Identified Non-Conforming Product

6.2.1. Non-Conformances Found Prior to Release to Customer

In the event non-conforming products or materials are discovered by CCR prior to release to CCR's customer(s), the parts/ components in question will be identified and segregated to prevent further use. CCR's evaluation of the non-conforming products or materials will determine whether:

- Defects are accumulated and returned to suppliers in accordance with plant procedures.
- Supplier sorts the defects at CCR or at a local off-site location.
- Supplier reworks defects at CCR or at a local off-site location.
- Supplier contracts 3rd party to complete inspections at CCR or at a local off-site location.

6.3. Supplier Non-Conformance/Corrective Action Reports and Requirements (SCAR)

6.3.1. Initial containment action (steps D1-D3 of the 8D) shall be provided in writing to CCR within 24 hours. If CCR disagrees with the containment action, the supplier must respond with a revised containment action within 24 hours.

6.3.2. Failure Analysis leading to the root cause determination shall be completed within 14-30 days unless additional timing is approved by the CCR SCAR Requestor. There may be occurrences in which the supplier cannot begin failure analysis until they have either received the suspect component from CCR or visited a CCR /job site to investigate. In these cases, the start of the 14-30 days window may be delayed until such time.

6.3.3. The SCAR will not be considered complete until proposed corrective and preventive action has been approved by CCR and its effectiveness verified. SCARs shall be completed within 45 days unless additional time is approved by the CCR SCAR Requestor, due to the complexity of the issue. Any issue going past 90 days should be presented to the site manager.

6.3.4. The SCAR process and all open SCARs shall be reviewed as part of each entities local Quality Management Review process.

6.4. CONTROLLED SHIPMENT (CS)

6.4.1. APPLICABILITY

Applies to **all**:

- Suppliers of record and their sub-tiers, who manufacture and ship material to CCR.
- CCR Manufacturing and business process sites (responsible for initiating & governing this process)
- Raw materials, purchased parts, purchased products, assemblies, and finished product whether in process, in storage or at distributors.
- Significant issues, which include repeat quality issues and corrective actions, quality escapes, safety issues, poor containment / resolution / closure of previous issues, field and warranty issues, and in other circumstances as deemed necessary by CCR.

6.4.2. Overview of Controlled Shipment Levels

CCR will determine when a supplier shall be placed into Controlled Shipping Level 1 (CS1) and/or Controlled Shipping CCR may place a supplier immediately into and bypassing CS1 when deemed necessary.

6.4.3. Level I Controlled Shipment (CS1)

For CS1, the supplier must provide a certified of conforming material to CCR. The supplier shall provide CS1 inspection results at the specified frequency determined by CCR. The supplier shall continue problem solving activities and corrective action implementation using the 8D process.

6.4.4. Responsibility Matrix

Legend			
R = Responsible	A – Accountable (and approver)	C = Consulted	I = Informed

	Activity	SQE	Supplier	Buyer
LEVEL I CONTROLLED SHIPMENT (CS1)	1a. Determine if the quality issue is a repeat. 1b. Issue Corrective Action (8D) & notify supplier. 2.c notify buyer	R, A	I	I,C
	2. Initiate containment at CCR & Supplier locations. Timely completion of 8D steps	A	R	
	3. Send CS1 letter to supplier with exit criteria by local SQE	R, A	I	C
	4a. Determine if CS1 exit criteria is met.	R, A	I	C
	5. Resolve all financial / commercial / delivery issues related to CS activities with Supplier	C	R	R,A

6.1. Key Expectations for Controlled Shipping

SQE	- Initiate 8D, track progress & approve closure - Determine if CS1 containment is required - Approve corrective actions / containment methods - Determine frequency for supplier to provide containment results - Set up review meetings with the supplier - Issue Start & Exit Controlled Shipping letters to supplier - Communicate with Factory on key activities - Audit / Verification at Supplier (if needed)
BUYER	- Participate and support /SQE - Support /SQE during escalations - Document. Review & Resolve all financial / commercial / delivery issues related to CS activities with Supplier

6.2. Criteria to exit from CS1 controlled Shipping

All below steps must be met to exit from the controlled shipment.

~~a)~~ The supplier must demonstrate that all the corrective action (8D) steps were completed in a timely manner.
b) There were no non-conformances found during the containment process.
c) For CS1 there were no non-conformances found for at least last production batch after implementation and validation of the corrective action.
d) The activity was effective by documenting daily containment results and providing this data to CCR.
e) It is the responsibility of the SQE to review the above steps before sending the information to the supplier to exit from the process.
f) Under no circumstances, should the supplier stop controlled shipping activities, unless they receive written communication from CCR.

6.3. Non-Conforming Material Disposition at CCR Factories

Under no circumstances shall a supplier ship non-conforming material without an approved Supplier Deviation Request (SDR) from CCR. CCR's evaluation of the non-conformance (plant, in transit, field, etc.), will determine whether:

- Defects are accumulated and returned to suppliers in accordance with plant procedures.
- Supplier sorts, defects at CCR or at a local off-site location.
- Supplier reworks defects at CCR or at a local off-site location.

- Supplier contracts 3rd party to complete inspections at CCR or at a local off-site location.
- Defective parts to be repaired/ replaced in the field by CCR.
- Defective parts be repaired/ replaced in the field by supplier.
- Product is recalled and repaired or replaced.

7. REFERENCE MATERIALS

QLY-57 Supplier Qualifications & Audits

QLY-33 Control of Non-Conforming Material

8. REVISION/REVIEW UPDATES

Change #	Revision Description	Approved by & Title	Date
1	New process release	Andrea Lindmayer, CCR Global Quality Lead	11.10.2024

Global Supplier Quality Process

APPENDIX 1

Below requirements table defines the documentation / data to be submitted to CCR or retained by supplier.

PPAP Requirements / Submission Table

		Level 1	Level 2	Level 3	Level 4	• Level 5
1	Design Record	R	S	S	*	R
	for proprietary components	R	R	R	*	R
	for all other components/ details	R	S	S	*	R
2	Engineering Change Documents, if applicable	R	S	S	*	R
3	Customer Engineering approval, if required	R	R	S	*	R
4	Design FMEA	R	R	S	*	R
5	Process Flow Diagrams	R	R	S	*	R
6	Process FMEA	R	R	S	*	R
7	Control Plan	R	R	S	*	R
8	Measurement System Analysis Studies	R	R	S	*	R
9	Dimensional Results	R	S	S	*	R
10	Material, Performance Test Results	R	S	S	*	R
11	Initial Process Studies	R	R	S	*	R
12	Qualified Laboratory Documentation	R	S	S	*	R
13	Appearance Approval Report (AAR), If applicable	S	S	S	*	R
14	Sample Product	R	S	S	*	R
15	Master Sample	R	R	R	*	R
16	Checking Aids	R	S	S	*	R
17	Records of Compliance	R	R	S	*	R
18	Part Submission Warrant (PSW)	S	S	S	S	R

S = shall be submitted to CCR.A copy shall be retained at the supplier location.

R = shall be retained by the supplier location and made available to CCR upon request

*** =** shall be retained by the supplier location and submitted to CCR upon request

Elements of PPAP Defined

I. Design Records

A printed copy of the drawing needs to be provided. If CCR is design responsible, this is a copy of the specification or drawing that is sent together with the Purchase Order (PO). If supplier is design responsible this is a released drawing in supplier's release system. Ballooned drawing/ specification: Supplier must number each feature and requirement on the design record. Numbering must correspond with the documented inspection results (including notes, standard tolerance notes and specifications, and anything else relevant to the design of the part).

II. Authorized Engineering Change (note) Documents

If submission is required while a formal change is in process, an approved Supplier Deviation Request (SCDR) must be included.

a) Engineering Approval

If submission is required before CCR engineering has approved all Engineering qualification tests, an approved Supplier Deviation Request (SCDR) must be included.

b) DFMEA

If the supplier is design responsible, a copy of the Design FMEA (DFMEA), reviewed and signed -off by CCR Engineering must be included. If it is agreed the DFMEA contains supplier control Intellectual Property (IP), the DFMEA may be reviewed with CCR Engineering and Quality for approval. Where CCR is design responsible the list of all Key Characteristics should be shared with the supplier, so they can be addressed on the PFMEA and Control Plan. This would typically take place during a design feasibility review meeting.

c) Process Flow Diagram

A copy of the Process Flow, indicating all steps and sequence in the fabrication process, including incoming components.

d) PFMEA

A copy of the Process Failure Mode and Effect Analysis (PFMEA) reviewed and signed -off by supplier and customer. The PFMEA should address potential

failure modes in each step as outlined in the process flow document. [Including packaging and labeling]. All KC and KPC's must be included on the PFMEA.

e) Control Plan

A copy of the control plan reviewed and signed-off by supplier and customer. The control plan follows the PFMEA steps. All KC and KPC's must be identified and included on the control plan.

f) Measurement System Analysis Studies (MSA)

MSA usually contains the Gage R&R for the Key Characteristics (KCs) and Key Product Characteristics (KPC). MSA is required for both variable and attribute features.

g) Dimensional Results

A list of every dimension noted on the ballooned drawing/ specification. This list shows the product characteristic, specification, the measurement results, and the assessment showing if this dimension is "ok" or "not ok". CCR will define the quality required for a dimensional layout, typically 3-5 pieces, however this may be adjusted in special circumstances such as multi-cavity tooling.

h) Records of Material / Performance Tests

A summary of every required test performed on the part. Requirements are usually agreed to by Supplier & CCR during the design feasibility meetings. This summary lists each individual test, when it was performed, the specification, results, and the assessment pass/ fail. Supporting data to be included as requested but may be submitted as tests are completed. In addition, this section lists all material certifications (steel, plastics, plating, etc.), as specified on the print/ specification. Actual materials certifications are to be included with the submission.

i) Initial Process Studies

Usually this section shows all Statistical Process Control charts affecting the most critical characteristics. The intent is to demonstrate that critical processes have stable variability and that is running near the intended nominal value. All CCR defined KCs and Supplier defined KPC's must have studies included.

j) Qualified Laboratory Documentation

Copy of all laboratory certifications (e.g., ISO 17025, TS) of the laboratories that performed the tests reported on section 10.

k) Appearance Approval Report

A copy of the AAI (Appearance Approval Inspection) form signed by the customer. Applicable for components affecting appearance only. Requirements

for any Appearance Approval Reports should be defined during the Design Review.

l) Sample Production Parts

CCR will define the number of samples to be submitted with the PPAP. Such samples must be produced as part of the PPAP production run. These samples are to be numbered to correspond to the measurement data submitted with the Dimensional Report (Item 9 above)

m) Master Sample

A sample [typically] signed off by customer and supplier, which usually is used to train operators on subjective inspections such as visual or for noise.

n) Checking Aids

When there are special tools for checking parts, this section shows a drawing of the template or tool and calibration records, including dimensional report of the tool. (CMM programing information may be requested)

o) Customer-Specific Requirements

CCR customer may have specific requirements to be included on the PPAP package. It is a good practice to ask the customer for PPAP expectations before even quoting for a job.

p) Parts Warrant (PSW)

This form that summarizes the whole PPAP package. The PSW includes part information, the reason for submission and the level of documents submitted to the customer. A Declaration statement must be signed by an authorized person at the Supplier's site making the submission (typically the plant quality manager). The supplier is not authorized until they have received a full or interim approved PSW from CCR

If a Level 4 PPAP is requested, the CCR requestor must specify, in writing, what documentation / data will be required to accompany the PPAP submission.

Global Supplier Quality Process

APPENDIX 2

DEFINITIONS

8D - The name “8D” originates from the fact there are eight disciplines associated with this problem-solving format. CCR has adopted the 8D format to be used for both internal and external problem-solving activities including root cause assessments.

Capability - The ability of a process to produce output within specified limits. “Improving process capability” involves taking steps to limit the amount of variation to defined acceptable limits.

Capability Index - The comparison of available tolerance to the portion of the tolerance consumed by a process in a state of statistical control.

Corrective Action Report (CAR) - A formal request by CCR to take action to eliminate the cause(s) of an existing nonconformity or other undesirable situation to prevent recurrence.

Control Plan (CP) - Methodology for controlling parts and processes to ensure all process outputs remain in a state of control. The plan is used and maintained throughout the product life cycle and is responsive to changing process conditions via written descriptions of the actions that are required at each phase of the process from receiving through shipping.

Critical Item - Any component, material, assembly, or complete system which is selected for production and field traceability to satisfy safety reporting requirements or to support reliability analysis of high cost / high interest items. For example, a compressor model or certain electronic control modules might be designated as “traceable” items due to their high replacement costs. A furnace gas valve might be designated due to product safety reporting needs.

Deliverable Software - All software intended to be used in CCR saleable product, including but not limited to software embedded in deliverable hardware and deliverable firmware. Refer to section 9 Change Management.

Directed-buy source - Any sub-tier supplier providing material, components, software, or services which has been designated to be used by CCR.

Escapes (SRE - Supplier Responsible Escapes)- field issues, including field actions, recalls, or Epidemic failures. (Each escape MUST have an 8D initiated.)

Epidemic Failure - any product or service that is delivered to a customer or end user which exhibits a failure rate or nonconformance more than the threshold rates in the applicable Commercial Contract.

Failure Mode and Effects Analysis (FMEA) - A preventive analytical technique to methodically study the cause and effects of potential failures in a product or a process. The

product or process is examined for all the ways in which a failure can occur. For each potential failure, an assessment is made of its effect on the system and its seriousness, and a review is made of the action being taken (or planned) to minimize the probability of failure or to minimize the effects of the failure.

Gage Repeatability and Reproducibility (Gage R&R) - The evaluation of a gauging instrument's accuracy by determining whether the measurements taken with it are repeatable and reproducible.

Key Characteristic (KC) - Any feature of a material, process, part, assembly, or test, whose variation within or outside the specified requirement has a significant influence on product fit, form, function, or other expected deliverable, and thus must be controlled within prescribed acceptance limits via Process Certification practices.

Key Process Inputs (KPI) - A subset of the process inputs or their characteristics that are key to running the process and producing the right product/ output.

Key Product Characteristic (KPC) - KPCs are product features that are indicated on the drawing and or related documentation by engineering as described in 5.1.3. These are typically critical to safety, critical to function, and by exception critical to process features of the product that must be controlled within prescribed acceptance limits via Process Certification.

Non-conforming product / material/ service - non-fulfillment of an intended requirement for reasonable expectation for use, including safety considerations.

Supplier On Time Delivery (SOTD) - The number of purchase order items delivered on time to the required date and quantity. For further information, please reach out to your respective CCR sites.

Part Family - Group of related products that pass through similar processing steps and over common equipment in a value stream.

Parts Per Million (PPM) - A measurement of the defect rate in a product, calculated as: PPM = (Total number of defective parts) x 1,000,000 / (Total number of parts received).

Part Submission Warrant (PSW) - The warrant contains supplier, part information, required documentation, the supplier application warrant and CCR disposition. CCR'sapproval of the PSW authorizes the supplier to start production.

Process Capability - The range over which the natural variation of a process occurs as determined by the system of common causes. Process capability has three important components: design specification, centering of the natural variation, range or spread of the variation. The importance of process capability is in assessing the relationship between the natural variation of a process and the design specifications. This relationship is often quantified by measures known as process capability indices. The most common is Cpk.

Global Supplier Quality Process

Production Material and Services - Includes parts, components or raw material that are directly used in the manufacture of CCR products; supplier designed products that are incorporated into a CCR assembly/product; and finished goods branded by CCR.

Production Part Approval Process (PPAP) - A process which defines the generic requirements for production part approval. The purpose of PPAP is to determine if all customer engineering design record and specification requirements are properly understood by the supplier and that the process has the potential to produce product consistently meeting these requirements during an actual production run at the quoted production rate.

Quality Event - A significant supplier quality related issue that causes downtime or rework of finished goods. The site Quality Manager and Supply Chain Management must be aware of all Quality Events and a full 8D must be initiated for each Quality Event.

CCR Supplier Quality Systems (CQS) Audit - A quality management standard whereby suppliers are rated different levels of compliance.

Repeatability - Assesses the variation in a measurement system caused by the combined sources of measurement variation of a gage or test equipment when used by one operator or under one set of environmental conditions.

Reproducibility - Variation in measurement averages when more than one operator or set of environmental conditions are imposed on the gage or piece of test equipment.

Run at Rate study - A formalized production capacity study that verifies proper cycle times, quality expectations and yields have been achieved in accordance with plan.

Work Transitions - Work transitions are any movement of production from one manufacturing plant to another.

Global Supplier Quality Process

APPENDIX 3

Activity	Site SQA	Global SQA	Site Quality	Global Quality	Supply Chain
8D corrective action/reporting	R,A	C			I
Business performance review	C	C	R,A	I	I
Controlled shipping	C		R,A	I	I
Commodity reviews	I	I	C	I	R,A
Cost of poor quality	C		R,A	I	
Long term agreement requirements		C	C	I	R,A
Non-conforming material disposition	C		R,A	I	I
Process development process	C		R,A	I,C	
Supplier audit	R,A	R,A			C
PPAP	R,A	R,A			C
Risk assessment	C		R,A	I	
Supplier on time delivery	I	I	I	I	R,A
Supplier selection/qualification	C	C	C	I	R,A
Training program	C		R,A		