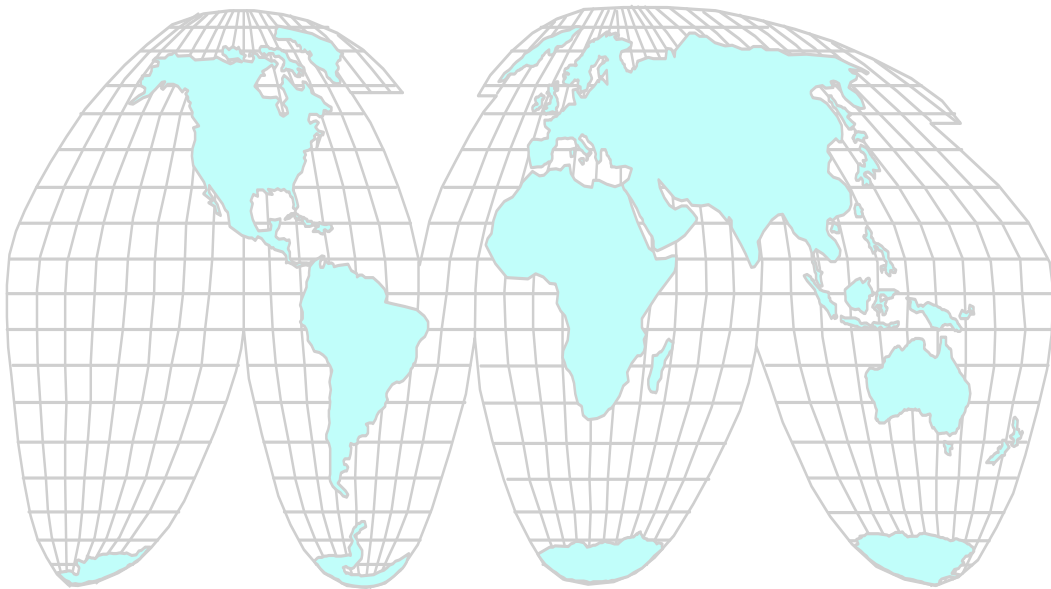




# **Supplier Quality Processes and Measurements Procedure**



**General Procedure  
GP-5  
June, 2006 Edition**

**GM 1746**

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## Supplier Quality Processes and Measurements Procedure

GP – 5

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All GM 1927 suffixed documents referenced in this manual can be found in the Quality library of GM SupplyPower in the following folder: GM 1927 - Suffixed Documents

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## Revision History – June 2008

Old Section Number/ Document Number	New Section Number/ Document Number	Section Description	Change
5.2.4.1	Same	Global Container Center Responsible Packaging	Changed GMNA Containerization throughout entire section to Global Container Center (GCC). Added Container Quality and Container Delivery as the types of PRR's that can be written against GCC as well as secondary non-conformance definitions. Removed Duns # for GCC because each region of GCC will have its own Duns number for their location.

## Revision History – September, 2007

Old Section Number/ Document Number	New Section Number/ Document Number	Section Description	Change
5.6.0	same	Cost Recovery Process	Removed reference to 'Administrative costs' for Cost Recoveries

## Revision History – May, 2007

Old Section Number/ Document Number	New Section Number/ Document Number	Section Description	Change
3.13	same	Plant Disruption Powertrain	Clarified criteria for Powertrain Plant Disruption

## Revision History – November, 2006

Old Section Number/ Document Number	New Section Number/ Document Number	Section Description	Change
6.3.2	6.3.2 (i)	Controlled Shipping - Level 1 Process – Check and Monitor, Supplier Responsibility	Clause added: GP12 requirements if PRR caused by dimensional issues

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## Revision History – June, 2006

Old Section Number/ Document Number	New Section Number/ Document Number	Section Description	Change
3.10	3.10	Major Disruptions	Definition titles changed from: Launch Spill to Launch Major Disruption; Production Spill to Production Major Disruption
3.13	3.13	Production Major Disruption	Title changed from Production Spill to Production Major Disruption
3.13.2	3.13.2	Quality Major Disruption	Title changed from Quality Spill to Quality Major Disruption
	3.13.2.1	Manufacturing Plant Major Disruption	Section added
	3.13.2.2	Assembly Plant Major Disruption	Section added – process modified
	5.1.2	Lot Audit/Lot Acceptance PRR	Added process and description
5.6.1	5.6.1	Cost Recovery Process - General	Clarified Cost Recovery types
5.6.2	5.6.2	Cost Limits and Restrictions	Clarified determination process
8.2	8.2	Major Disruption	Added Field Action as a Major Disruption Type
10.0	10.0	Major Disruption Flow Chart	Updated flow chart to concur with current process

## Revision History – May, 2005

Old Section Number/ Document Number	New Section Number/ Document Number	Section Description	Change
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3.4	3.4	Drill Deep	Definition title changed from Five (5) Whys 3 Times to Drill Deep. Clarified questions to be asked when initiating the process
3.18	3.18	Read Across	Removed the term PRR from definition title
	4.0	General Expectations	Section added
	4.1	Supplier Representative Responsibilities	Added definition and description
	4.2	Quality Alert Process	Added definition, process description and process flowchart
4.0	5.0	Problem Reporting and Resolution	Section renumbered
4.1	5.1	General	Added Suppliers placed on “New Business Hold” and “Program Management.”
4.2.4	5.2.4	Packaging	Clarified PRR type for parts nonconformances resulting from part damage.
	5.2.8	New Business Hold	Added definition
	5.2.9	Program Management	Added definition
4.6.2	5.6.2	Cost Limits and Restrictions	Changed man-hours charged from minimum rate of US \$55 per hour to the rate currently in effect at the issuing location.
5.0	6.0	Controlled Shipping	Section renumbered
5.3.1	6.3.1	Assessment	Added “The Customer” to clarify which SQE has the authority to place a supplier on CS1
5.4.1	6.4.1	Assessment	Added “The Customer” to clarify which SQE has the authority to place a supplier on CS2

**Supplier Quality Processes and Measurements Procedure**

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**Scope****1.1 General**

This General Procedure (GP), defined as GP-5, is an integral part of the Supplier Quality Improvement Process. It applies equally to all suppliers and affiliated organizations who supply parts, materials, equipment, or logistical services for production, pre-production, and / or service to the customer.

**1.2 Purpose**

This General Procedure defines the process, roles, responsibilities and requirements of:

- Problem Reporting and Resolution (PRR)
- Controlled Shipping
- Supplier Measurements
  - PRR's
  - Parts Per Million (PPM)
  - Incidents of Controlled Shipping
  - Major Disruptions
- New Business Hold

**2 References**

The following documents are referenced in this General Procedure:

**2.1 Quality System Requirements (TS-16949), AIAG****2.2 Shipping and Delivery Performance Requirements (GM1797)****2.3 Packaging and Identification Requirements for Production Parts (GM1738)****2.4 Shipping/Parts Identification Label Standard (GM1724)****2.5 Bar Code Standard for Part/Component/Module Identification and Traceability (GM1737)****2.6 Traceability Identifier Requirements for Selected Components on Passenger and Light Truck Vehicles – Traceability Identifier Requirement (TIR-15-300), (GM1731)****2.7 Potential Failure Mode and Effects Analysis, AIAG****2.8 Advanced Product Quality Planning and Control Plan, AIAG****2.9 Global Quality Tracking System (GQTS), User Guide For PRR Module**

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(GM2420)

**2.10 ISO TS 16949 – Quality Management Systems****2.11 Global Supplier Quality Manual (GM 1927)****3 Terms and Definitions****3.1 Control and rework company**

- A company approved by the customer to perform controlled shipping level 2 inspections or other work necessary to ensure product quality
- A company performing directly under the responsibility of the supplier

**3.2 Duns Number**

A unique supplier identification number that is issued by Dun & Bradstreet. It is used to identify a supplier contract location, i.e. manufacturing, sales, ship-from, “remit to”, etc.

**3.3 Field Action**

A special cause product deficiency in the field that results in either a field campaign or recall and where the supplier responsibility has been determined to be more than 50%.

**3.4 Drill Deep (Reference GM 1927-84)**

A detailed root cause analysis for a specific PRR that includes a 5 why analysis for each of the following:

- Why did the manufacturing process not prevent this failure mode?
- Why did the quality process not protect from this failure mode?
- Why did the planning process not predict this failure mode?

**3.5 Issuing Location**

A customer location issuing a PRR.

**3.6 Launch Downtime**

A downtime incident, between Start of Saleable and Ship to Commerce, which impacts the launch of a new product and meets the Production Downtime definition (section 3.11).

**Supplier Quality Processes and Measurements Procedure****GP – 5****3.7 Launch Plant Disruption**

A significant issue on vehicles/products built between Start of Saleable and Ship to Commerce that impacts the launch of a new product and meets the Production Major Disruption definition (section 3.13).

**3.8 Launch Stock out**

A stock-out issue that occurs between Start of Saleable and Ship to Commerce that impacts the launch of a new product and meets the Production Stock-out definition (section 3.14).

**3.9 Line Accumulations**

Line accumulations are defined as unavoidable discrepancies or single cases of commodities where only initial response is needed. These PRR's will be issued on a monthly basis per part or part group. It includes those parts that are scrapped in customer lines due to internal defects in the part, not detectable by the supplier, and which are revealed by the customer's internal processes.

**3.10 Major Disruption**

A supplier responsible incident causing a severe negative impact to the Customer's ability to launch and/or manufacture their product. Classifications include the following:

- Launch – Downtime (section 3.6)
- Launch – Plant Disruption (section 3.7)
- Launch – Stock Out (section 3.8)
- Production – Downtime (section 3.11)
- Production – Premium Transportation (section 3.12)
- Production – Plant Disruption (section 3.13)
- Production – Stock Out (section 3.14)
- Field Action (section 3.3)

**3.11 Production – Downtime**

A Production - Downtime incident, which includes all of the following:

- A problem has been identified and verified as supplier fault AND
- Requires a plant to stop production of its products AND
- The downtime experienced is 5 minutes or longer AND
- The line stoppage occurred in the "main production" line.

**3.11.1 Service Downtime (North America)**

A downtime condition within the North American service parts inventory system is characterized as a Major Disruption when the following occurs:

- A severe shortage of service inventory identified and verified as supplier fault AND
- One or more service part locations/customers are operating below planned inventory levels resulting in unshipped customer orders for which expedited shipment / transfer of inventory, referral / upgrades of customer orders, or other

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expedited handling activities within the service supply chain have been initiated to no avail in eliminating the shortage condition.

**3.12 Production – Premium Transportation**

A Production - Premium Transportation includes any special transportation required to ship material to the Plant as a result of a Supplier issue. Supplier issues could include non-conformances related to Shipping, Packaging or Quality PRR types. Logistical Service Provider issues could include nonconformances related to the quality of service as described in the service contract (e.g. late delivery, wrong sequence, damaged parts, etc.)

**3.13 Production – Plant Disruption****3.13.1 Engineering Plant Disruption**

An Engineering Plant Disruption is a design/function problem that causes a major plant disruption. If the supplier is design responsible, then the issue is documented in GQTS as a Plant Disruption with an Engineering PRR type.

**3.13.2 Quality Plant Disruption including GMPT Internal Disruption****3.13.2.1 Powertrain (PT) or Metal Fab Plant Disruption**

- PT internal disruption is a special cause circumstance that drives operations out of normal standardized work that ultimately impacts quality, cost, and throughput OR.
- PT internal disruption can be a part quality issue, a design issue or a plant process issue such as machining, material specification, or mis-builds.
- Plant daily production mix is significantly altered OR
- Final engine/transmission assembly line, pay point downtime of 20 minutes or more cumulative downtime with-in the same shift (excludes stock outs or mechanical breakdowns, but includes quality issues) OR
- A verified quality concern or nonconformance that impacts non standard labor for a minimum of 50 hours. This includes 100% inspection, sorting, rework/repair, reconfirmation (re-test), teardowns, etc. OR
- Shipping of finished products is halted (dock on hold, recall of shipments) as a result of a significant quality concern, ultimately resulting in repairs and/or costs to GM OR
- Increase on hand float (QC&A hold) of 40 engines/transmissions or more for a single issue.

**3.13.2.2 Assembly Plant Disruption**

- An assembly plant disruption is a special cause circumstance that drives operations out of normal standardized work that ultimately impacts quality, cost, and throughput OR.
- An assembly plant disruption can be a part quality issue, a design issue, or a plant process issue such as welding, torque, or mis-builds
- Plant daily production mix is significantly altered OR.
- Assembly plant final line, pay point downtime 20 minutes or more cumulative downtime within the same shift OR.

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- A verified quality concern or nonconformance that impacts non standard labor for a minimum of 50 hours. This includes inspection and/or repair and/or reconfirmation OR
- Shipping of finished products is halted as a result of a significant quality concern, ultimately resulting in repairs and/or costs to GM.
- Increase on hand float by 40 vehicles for a single issue.

**3.14 Production – Stockout**

Stockout includes all of the following:

- A shortage of plant inventory that has been identified and verified as supplier fault AND
- The plant continues production of its products excluding the missing part AND
- The plant is required to rework the finished product to install, or include the conforming part or material.

**NOTE1:** A stockout does NOT result from a sudden schedule change where the supplier did not have adequate time to adjust their production schedule.

**3.14.1 Service Stockout (North America)**

A stockout condition within the North American service parts inventory system is characterized as a Major Disruption when the following occurs:

- A shortage of service inventory is identified and verified as supplier fault AND
- One or more service part locations/customers are operating below planned inventory levels resulting in expedited shipment / transfer of inventory, referral of customer orders, or customer order upgrades to remedy the shortage condition.

**3.15 Nonconformance**

Product, material, or logistical service that does not conform to the customer requirements or specifications.

**3.16 Nonconformity**

A process which does not conform to a quality system requirement.

**3.17 PRR (Problem Reporting and Resolution)**

A record issued in a standard format to:

- Quantify and describe problem(s) encountered by the customer
- Define the magnitude of the problem
- Identify the supplier by Duns code
- Identify the part number, if applicable

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- Identify key customer contact(s) name and phone number
- Identify the phase of vehicle build (production, pilot, prototype, beta, alpha), as applicable
- Quantify and request reimbursement for costs incurred due to the problem(s) encountered
- Define status and material disposition
- Record corrective action plan
- Record timing of updates to FMEA (Failure Modes and Effect Analysis) and PCP (Process Control Plan)
- Identify how solution will be institutionalized across the supplier's facility
- Identify where the defect was found (GCA, Dept., etc.)
- Identify Tier 2 or directed buy supplier involved in issue, if applicable

**3.18 Read Across (Reference GM 1927- 69)**

A formalized lessons learned process that identifies a specific failure mode, containment method and ensures corrective action and documentation updates are implemented for similar issues across a Duns/Division/Company. The process includes:

- Identification of failure mode and corrective action
- Implementation of a containment method
- Revision of FMEA and Control Plan
- Identification of similar processes/operations
- Incorporation of the corrective action
- Revision of FMEA and Control Plan for each similar process
- Documentation on a Process Read Across Matrix

**3.19 Quality Performance Reports**

Monthly 6 panel charts that graphically display the data contained in GQTS.

Charts display the following data elements for all PRR types:

- Major Disruptions: Assembly and Manufacturing Plant Major Disruptions, Downtime, Stockouts, Premium Transportation
- PRR's
- Discrepant Parts
- PPM

Some of the above data elements are additionally itemized by PRR types to identify Supplier Quality issues (Quality, Customer Satisfaction, and Warranty PRR types) versus Supply Chain issues (Packaging and Shipping PRR types).

**3.20 Sourcing Metrics**

Supplier evaluation system that ranks each supplier manufacturing location in one of three categories: green, yellow or red. The ranking criteria is based on formula defined in the Creativity Team Bid List.

**3.21 Supplier (Internal) - facilities part of GM (including Joint Ventures)**

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**3.22 Supplier (Outside/External) - facilities NOT part of GM**

**3.23 Suspect Material**

Suspect Material is any material or product that may contain a defined nonconformance.

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## 4 General Expectations

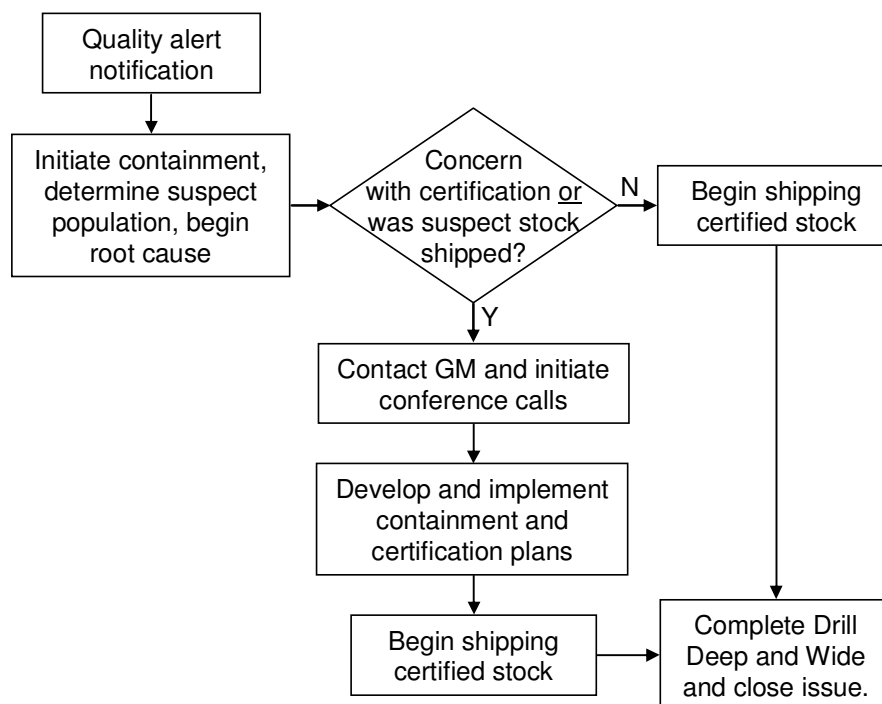
### 4.1 Supplier Representatives

Suppliers that have representatives working at General Motors facilities shall support the expectations of their customer.

### 4.2 Quality Alerts

This section describes General Motors' expectations from Suppliers when there is a potential quality disruption to General Motors' Facilities. Please refer to Exhibit 4.2.1 below.

Exhibit 4.2.1 Quality Alert Flow Chart



- Quality alerts can be Supplier initiated or concerns found by General Motors. Process begins upon notification to or from the Supplier. In either case, the appropriate PR/R shall be issued when applicable.
- Containment actions must be initiated to all ship locations.
- **The supplier shall promptly notify the customer whenever suspect product or material may have been shipped or when there is a concern with certification method.**

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## 5 Problem Reporting and Resolution (PRR)

### 5.1 General

PRR's may be issued to address the following:

- Supplier-responsible part or material nonconformance through the life of the part or material
- Supplier-responsible packaging nonconformance (i.e. labelling issues)
- Issues and concerns with the shipping of production parts or material to the customer
- Issues and concerns related to the quality of service as described in the service contract
- Supplier responsible warranty for special cause concerns
- Supplier responsible engineering design issues
- Procedural or process nonconformity: i.e., failure to communicate in a timely fashion, failure to comply to procedures, failure to meet deadlines
- Suppliers placed on New Business Hold
- Program management

#### 5.1.1 Supplier-Initiated PRR

The issuing location may categorize a PRR as "Supplier-Initiated" if the supplier notified the customer of a possible nonconformance prior to customers identifying the problem on their own.

If the parts or materials have NOT entered or affected the customer's production process, and have not impacted the workstation, no PRR is required.

If the suspect material has entered the customer's normal material flow to the production operator, the PRR should be classified as "Supplier Initiated".

##### 5.1.1.1 Ramifications of Supplier-Initiated PRR's

Costs incurred by the customer (e.g. sorting, rework) may be charged to the supplier.

Only the actual quantity of nonconforming parts identified on a "Supplier Initiated" Quality type PRR shall be counted as discrepant quantities in the PPM calculation for the supplier and part number.

**Supplier Quality Processes and Measurements Procedure****GP – 5****5.1.2 Lot Audit/Lot Acceptance Process PRR**

A Quality PRR will not be issued when a non-conformance has been detected and reported by the supplier/3rd party during a Lot Audit/Lot Acceptance process. However, for repeat issues or in instances where a non-conformance that is detected and reported during the Lot Audit/Lot Acceptance Process and was built into vehicles or causes a Major Disruption (3.10), then a Quality PRR and Controlled Shipping (6.1) may be issued. Costs incurred by the customer (e.g. sorting, rework) may be charged to the supplier in any instance.

**5.2 Types of PRR's****5.2.1 Customer Satisfaction**

A Customer Satisfaction PRR should be issued when the customer has verified that any other nonconformity, excluding pricing or other commercial issues, was the result of a supplier's action or inaction.

**NOTE:** A Customer Satisfaction PRR can be issued to a supplying location with or without reference to a part number.

Nonconformances that can result in a Customer Satisfaction PRR include, but are not limited to failures regarding:

- Communication requirements for data or information
- Lack of responsiveness, timeliness, or deadline issues (e.g. APQP Program Management)
- Procedural requirements
- Failure to honor promised corrective action

**5.2.2 Engineering**

Engineering PRR's may be issued to design responsible suppliers to document design related concerns. Customer design responsible concerns should be documented in PRTS.

**5.2.3 Indirect**

An Indirect PRR may be issued to document a supplier responsible problem caused by a non-production supplier (tooling, equipment repair parts, capital equipment, etc.) at the customer plant. This would include scheduled work activities that cannot be completed due to the supplier's failure to meet prior delivery commitments.

**5.2.4 Packaging**

A Packaging PRR should be issued when the customer has verified that the supplier caused a packaging nonconformance that does not result in part damage or affect the salability of the part.

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Nonconformances that may result in a Packaging PRR include, but are not limited to:

- Part or material that was inadequately secured in the container
- Container was inadequately secured in the carrier vehicle
- Container design and/or fabrication was inadequate
- Container that has been damaged by improper handling
- Mixed pallets built incorrectly
- Labeling issues that do not affect part identification

See 2.2, 2.3, 2.4, 2.5, and 2.6 for related requirements.

Packaging nonconformances that **do** cause part damage or affect the salability of the part will be issued as a Quality PRR.

**5.2.4.1 Global Container Center (GCC) Responsible Packaging**

A packaging PRR can be issued to GCC if there are problems with either Container Quality or Delivery. Each GCC location will have its own Duns Number.

**Container Quality**

The only secondary non-conformances that are to be used when issuing a PRR against GCC are Container Function, Part Damage and Ergonomic Concern.

**Container Function:**

A Container Function PRR may be issued when the container does not function properly. These types of issues do not result in part damage. Examples of non-conformances in this category that may result in a PRR include, but are not limited to:

- Insufficient container close offs
- Swing arms not closing properly
- Parts not secured (improper hold)
- Part interference issues (dunnage locations)

**Part Damage:**

A Part Damage PRR may be issued when there are part quality issues resulting from the container. These types of issues may or may not result in part damage. Examples of non-conformances in this category that may result in a PRR include, but are not limited to:

- Jumbled parts
- Bent / Broken parts
- Scratches on parts
- Warped / Deformed parts

**Supplier Quality Processes and Measurements Procedure****GP – 5****Ergonomics:**

An Ergonomic PRR may be issued when it has been verified that ergonomic stressors exist on a container. Examples of non-conformances in this category that may result in a PRR include, but are not limited to:

- Excessive reach required to load/unload the container
- Excessive forces required to open/close the container
- Sharp edges

The following secondary non-conformances are to be used when issuing a PRR against a GM supplier.

**Fabrication:**

A Fabrication PRR may be written if it has been verified that the supplied item was not produced properly. These types of issues may or may not result in part damage. Examples of non-conformances in this category that may result in a PRR include, but are not limited to:

- Jumbled parts
- Bent / Broken parts
- Scratches on parts
- Warped / Deformed parts
- Swing arms not closing properly
- Part interference issues (dunnage locations)
- Sharp edges
- Excessive non-conformances during Quality review
- Non-functional
- Non-compliance to specifications

**Design:**

A Design PRR may be written if it has been verified that the container was not designed properly. These types of issues may or may not result in part damage. Examples of non-conformances in this category that may result in a PRR include, but are not limited to:

- Jumbled parts
- Bent / Broken parts
- Scratches on parts
- Warped / Deformed parts
- Issues with build prints
- Insufficient container close offs

**Procedure / Communication:**

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A Procedure or Communication PRR may be written against a supplier. Examples of non-conformances in this category that may result in a PRR include, but are not limited to:

- Lack of responsiveness
- Not following required process

**Container Delivery****Failure to Update Production / Shipping Schedule:**

- A failure to update production/shipping schedule PRR should be issued when a fabricator or dunnage supplier does not enter/update the GM Containers website with a production/shipping schedule and/or comments for active projects.

**Delivery/ Logistics Failure:**

- A delivery / logistics failure PRR should be issued when a fabricator or dunnage supplier misses a milestone and delivers late or when they cause excess transportation costs (dry run).

**Procedure / Communication Failure:**

- A procedure / communication failure PRR should be issued when a fabricator or dunnage supplier does not follow standard GM procedures (holiday schedules, conference calls, and return emails). Communication PRRs should be issued when fabricators and dunnage suppliers fails to communicate with their Procurement Support Engineer (PSE).

**5.2.5 Quality**

A Quality PRR should be issued when the customer has verified that a nonconformance was caused by the supplier.

Nonconformances that may result in a Quality PRR include, but are not limited to, discrepancies or problems with:

- Appearance
- Dimensions
- Welds
- Finish, i.e. burrs or flash
- Contamination
- Coating
- Part or Container labeling issues affecting the part identification
- Laboratory and metallurgy specifications
- Machining
- Functions
- Parts not packaged to specification for service
- Parts damaged as a result

**Supplier Quality Processes and Measurements Procedure****GP – 5****5.2.6 Shipping**

A Shipping PRR should be issued when the customer has verified that a shipping or scheduling-related nonconformity was caused by the supplier.

Nonconformances that may result in a Shipping PRR include, but are not limited to:

- Noncompliance to schedule requirements
- Documentation noncompliance, i.e. missing or inaccurate shipping documents
- Nonconformity, or nonconformance caused by transportation carrier
- Nonconformity, or nonconformance caused by Logistical Service Provider
- Electronic communication issues or problems (see QS-9000, clause 4.15.6.4)
- Premium shipment issues, i.e. prepayment, coordination, excessive use

**5.2.7 Warranty**

A Warranty PRR can be issued when a supplier responsible issue is detected, through the CPIP or by any other customer activity, and after parts are shipped to commerce.

The issue must be a documented quality nonconformance or, if the supplier is design responsible, a documented engineering nonconformance.

**5.2.8 New Business Hold**

The customer will issue a New Business Hold PRR to document the supplier being placed on New Business Hold.

**5.2.9 Program Management**

A Program Management PRR may be issued by Global Purchasing / Supply Chain only, for nonconformance during launch phase that does not result in part damage or does not affect the salability of the part. Nonconformances that may result in a Program Management PRR include, but are not limited to the following:

- Failure to meet program timing
- Repeated engineering issues
- Data submission issues
- Non-responsiveness or lack of cooperation

**5.3 PRR Issuance****5.3.1 GQTS**

PRR's should only be issued in the GM Global Quality Tracking System (GQTS) by an authorized customer representative. Typically, PRR's are issued by the customer plant representative immediately after verification that the supplier is responsible for the issue. Refer to the GQTS User's Guide PRR Module for further system guidance.

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The language used in text fields of Major Disruption PRR's must be written in English. The preferred language on all PRR's is English.

The Line accumulation PRR should be entered in the system only after the full impact and the monthly quantity is available to the issuer. When it is appropriate for the plant, the PRR may be issued with the first occurrence of the discrepant part. Regular adjustments of the volume will then be made during the month. For awareness purposes, the issuer should indicate the possibility of adjustments when issuing the PRR.

**5.3.2 Problem Identification**

The issuing location shall define, in sufficient detail, the problem being encountered. The following information should be gathered prior to issuing the PRR:

- Duns number
- Part number, or "NPN " if not applicable
- Magnitude of the problem, i.e. Major Disruption (see 8.2)
- Reason for classifying the issue as a Major Disruption (added to the problem description)
- Whether or not the supplier notified the customer of a possible nonconformance prior to receipt of the material at the customer location (See 5.1.1)
- Type of PRR – internal or external (See 5.3.5)
- Accurate quantities of the problem parts / materials. (See 5.3.6)
- Location of where the problem was found (GCA, Department, etc.)
- Whether or not the problem affected the Direct Run Rate

**5.3.3 Verification of Responsibility**

The issuing location shall verify that the nonconformance is the supplier's responsibility prior to issuing a PRR to the supplier, and should issue the PRR to the supplier's manufacturing Duns on contract.

The issuing location should utilize appropriate expertise and resources (i.e. lab tests or dimensional checks) that are necessary to verify the nonconformance. Prior to issuing the PRR, if possible, the issuing location should contact the supplier by telephone, notify the supplier of the problem, and discuss immediate actions if expedited containment is necessary.

Whenever possible, the supplier is required to participate in identifying and verifying the nonconformances. If relevant evidence to support problem solving, such as the part, photograph, sketch, or marked drawing is not available, then the PRR should be deleted within 7 days from the PRR issue date by the initiating location.

**5.3.4 Suspect Material**

The issuing location should gather and quarantine suspect parts or material. The issuing location should (pursuant to regional practices) promptly return suspect material, if requested by the supplier. The supplier has 24 hours to provide a Return

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Material Authorization for suspect material to avoid potential scrapping of the material by the plant.

**5.3.5 Internal PRR**

A department, operation, or group within the issuing location may issue an Internal PRR to any other department or organization within their facility or domain without the PRR itself impacting the measures associated with that facility.

**NOTE 1:** For example, the final assembly line department could issue an Internal PRR to the paint department within an assembly plant without impact on the assembly plant's PPM or PRR count.

**NOTE 2:** The "Internal Destination" field in the PRR system is a free form field that can be used by the customer location for any information they choose.

**NOTE 3:** Suggestions for the destination are that the facility define "internal suppliers" by either department number, organizational group, or manager name to facilitate eventual reporting by the "internal supplier" groups.

**5.3.6 Identification of Quantities for the PRR**

When a PRR is issued to a supplier, the issuing location shall accurately record the quantity suspect, the quantity checked, and the quantity nonconforming on the PRR. When sorting is performed by the plant, the supplier, or a third party performs sorting, corrections must be made to the PRR to accurately reflect the quantity checked and quantity nonconforming. Corrections to a PRR are covered in section 5.3.9.

**5.3.6.1 Quantity Suspect**

To determine "Quantity suspect" on a PRR, the issuing location shall identify all material physically at the plant location that is suspected of containing the problem. The issuing location should consider the lot number, run date, ship date or other indicators that will help isolate the problem parts into the smallest logical batch. The quantity suspect does not include any product in transit. See examples in Section 9.

**5.3.6.2 Quantity Checked:**

Upon discovering nonconforming material, the issuing location shall inspect additional suspect parts, if possible, to allow the system to calculate an accurate percentage defective within the batch.

The quantity checked **MUST** be of a statistically significant size to represent the percentage defective within the batch.

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#### 5.3.6.3 Quantity Nonconforming

The issuing location shall determine the total actual discrepant quantity from the quantity checked. For example, parts or material may be found to be nonconforming based on:

- A visual or obvious inability by the operator to utilize the parts as intended
- Identification as “failed in lab test” or receiving inspection procedure
- Sorted suspect material

Quantity nonconforming shall not include:

- Steel coils/blanks that have not yet entered the process path.
- Material that is sorted by the plant/supplier from the suspect lot, is found to be conforming, and is returned to the issuing location for use.

The “Estimated Quantity Nonconforming” number is a system-generated calculation obtained from quantities input on the PRR. It is computed by dividing the “Quantity Nonconforming” by the “Quantity Checked” and multiplying the result by the “Quantity Suspect”.

#### Qty Nonconforming

**Quantity Checked X Total Quantity Suspect = Estimated Quantity N/C**

See example in Section 9

#### 5.3.6.4 Quantities for Label Issues or Bulk Materials for Product Received at Manufacturing Locations (Service Parts Warehousing will count 100% of the mislabeled parts as nonconforming)

Issues on parts shipped in bulk (fasteners, labels, clips, small stampings, etc.) or mislabeling problems will be counted using the following escalation process as long as the issue did not result in a major disruption.

- For the first offense, from the same supplier Duns, in the last 6 months, the issuer will count only one quantity discrepant against the supplier (Quantity nonconforming and estimated quantity nonconforming = 1) The supplier may also be placed in Controlled Shipping.
- For the second offense, from the same supplier Duns location, in the last 6 months, the issuer will count only one quantity discrepant against the supplier (Quantity nonconforming and estimated quantity nonconforming = 1) The supplier may also be placed in Controlled Shipping
- For the third offense, from the same supplier Duns, in the last 6 months, the issuer will count all parts against the supplier. The supplier may also be placed in Controlled Shipping.  
See Section 9.4 for further clarification.

#### 5.3.7 Adding nonconforming (discrepant) quantities to an existing PRR

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GQTS will identify all issue dates of any other PRR's previously issued that match the following criteria:

- Same supplier Duns number
- The "conforming material ship date" is later than the current date
- PRR is less than 15 days old

The issuing location should review these PRR's. If the problem is the same, the issuing location must add to the existing PRR instead of creating a new PRR.

**5.3.8 PRR Resolution**

A PRR is considered closed after the customer has moved the PRR from an "Open or "Rejected" status to an Approved status. The initiating location should close the PRR within 15 business days of receiving an acceptable final response from the supplier and verifying corrective action.

**5.3.9 Corrections to a PRR**

If any information on a PRR is found to be inaccurate, the issuing location MUST ensure that corrections are made. Corrections may be made only while the PRR is Open, unless an appeal is pending. If the supplier contests any PRR information, the issuing location MUST assist in investigating the details and then correct the information, where applicable. Appeals by the supplier MUST be directed to the appropriate Supplier Quality Management or Materials Management (for Shipping, Packaging, or Indirect PRR types) at the customer issuing location. (See 5.5.1)

**5.4 Supplier Requirements****5.4.1 General**

The supplier shall promptly notify the customer whenever suspect product or material may have been shipped.

**5.4.2 GQTS Monitoring**

The supplier shall access the GQTS system daily to check for any relevant PRR activity.

**5.4.3 Problem Identification**

The supplier shall provide proactive participation in problem identification if requested.

**5.4.4 Initial Response**

Within one (1) business day of the issuance of the PRR, the supplier should provide an initial response consisting of the following information:

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- Immediate and ongoing containment actions to be taken by the supplier to prevent further shipments of nonconforming parts or material. Containment shall be extraordinary, visible, and temporary. Containment shall include data collection and analysis.
- Initiate rework or sorting as an immediate containment at the customer location. Rework or sorting may be performed by the customer, supplier, or a rework company at the supplier's expense.
- Disposition of the nonconforming parts or material at the customer locations and in-transit. The supplier must analyze the entire delivery chain to identify any suspect material at any customer location or in-transit to the customer location(s).
- Date of the next shipment of conforming parts or material, including how it will be identified. The supplier must consider that the conforming material ship date should reflect all customer plants receiving the corrected parts or material.
- Name, title, and phone number of the supplier representative who provided the above information.
- Document in the containment section of the PRR response: A list of every customer plant or location the parts are shipped to, who was contacted at that facility, and what was/will be done to protect them from the issue.

Generally, suppliers will not be measured on the timeliness of their initial response. However, if an initial response is not received from the Supplier within one business day, the customer may issue a Customer Satisfaction PRR.

**5.4.5 Problem Solving**

The supplier shall promptly complete appropriate problem solving activities.

At a minimum, the supplier shall conduct a Drill Deep analysis for the issue. The Drill Deep analysis addresses the following questions and can be documented using the Drill Deep Matrix (See GM 1927-84):

Why did the manufacturing process not prevent this failure mode?

Why did the quality process not protect from this failure mode?

Why did the planning process not predict this failure mode?

**5.4.6 Final Response**

The supplier shall provide a final response within fifteen (15) calendar days of issuance of the PRR. The final response shall include at a minimum:

- Containment actions taken

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- Methods used to evaluate the success of containment actions taken (see 5.4.4)
- Root cause of the problem, including methods used to identify the root cause, and Drill Deep analysis for manufacturing, quality, and planning failures.
- Corrective and preventive action implemented (error proofing), including the rationale used in evaluating any alternatives
- Elements of the proposed implementation process
- Contact information of those assigned responsibility for actions taken
- How the success of proposed actions will be evaluated
- How the solution is to be institutionalized with respect to other similar processes and products (see QS-9000 clause 4.14.2.2.) A "Read Across" shall be used to document and implement corrective action across similar processes. (See Read Across matrix - GM 1927- 69)
- Dates when revised process Failure Mode and Effects Analysis (FMEA) and Control Plan (PCP), will be available for customer review. If no revisions were made, then enter today's date and make a note in the corrective action text field indicating that no revisions were made to the FMEA or PCP.
- Identification of the responsible tier 2 supplier, if applicable. This does not absolve the tier 1 supplier of any responsibility, but rather documents where the issue may have originated.
- Identification of the responsible directed buy tier 2 supplier, if applicable. This does not absolve the tier 1 supplier of any responsibility, but rather documents where the issue may have originated.

**NOTE:** See Potential Failure Mode and Effects Analysis and Advanced Product Quality Planning and Control Plan reference manuals.

Suppliers will be measured on the timeliness of their final response. It is expected that adequate thought and investigation be given to the problem, and that a timely response be given. If an adequate response cannot be completed within 15 calendar days, the supplier must notify the customer issuing location of the situation. Failure to respond, without prior notification, may result in a Customer Satisfaction PRR.

## 5.5 PRR Appeal Process

### 5.5.1 General

The supplier may appeal the issuance of a PRR or specific information contained in the PRR. To appeal, the supplier shall provide objective evidence, in writing, to the issuing location demonstrating rationale for the appeal. Any request for change to a PRR due to an error MUST be submitted within 15 calendar days of issuance of the PRR.

If the issuing location and the supplier do not agree, and the supplier wants to pursue the appeal further, the appeal should be directed to the applicable Supplier Quality, Materials Management, or Quality Management for revision or deletion. Issues between different regions should be coordinated between the Regional Supplier Quality

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Managers.

**5.6 Cost Recovery Process (applies to regions using QTS to document cost recovery)****5.6.1 General**

The customer uses the Cost Recovery process to recover costs incurred as a result of a supplier's nonconformance on issues occurring before vehicles are shipped to commerce (in plant) and for issues discovered after vehicles are shipped to commerce (warranty).

In plant Cost Recovery requests shall have adequate supporting documentation regarding the issue. Typically, man-hours, downtime, vehicles or units impacted and investigation costs may be used to determine the amount of cost recovery.

Warranty Cost Recovery requests shall have adequate supporting documentation regarding the issue. Typically, part cost, dealer mark-up, standard labor hours, and investigation costs may be used, along with the total number of claims, to determine the amount of the cost recovery. The customer shall provide, when issuing a cost recovery request, detailed explanations of any additional costs.

**5.6.2 Cost Limits and Restrictions**

**5.6.2.1** Total ACTUAL/incremental costs will be determined by each initiating location

**5.6.2.2** Man-hours shall be charged at the rate currently in effect at the location executing the cost recovery. Does not apply to Warranty Cost Recoveries.

**5.6.2.3** Downtime, within the main line of the customer plant, (excluding buffer, feeder lines, etc.) **shall be charged at US \$500 per minute and shall be 5 minutes or greater in duration.** Downtime less than 5 minutes may be recorded in a cost recovery but will **NOT** generate any request for actual payment. For regions utilizing a different charge back rate, see 5.6.2.11. Does not apply to Warranty Cost Recoveries.

**5.6.2.4** Downtime incurred in feeder lines, buffer lines, stamping presses, individual component manufacturing and / or assembly lines, etc. **shall be charged based on the man-hours lost. (See 5.6.2.2.)** Does not apply to Warranty Cost Recoveries.

**5.6.2.5** Stock-out charges shall be assessed based on the man-hours expended to correct or retrofit vehicles or units. Does not apply to Warranty Cost Recoveries.

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**5.6.2.6** Premium freight is to be covered by the originator in the amount it occurred. Does not apply to Warranty Cost Recoveries.

**5.6.2.7** Other costs associated with the impact of a nonconformance that results in additional cost to the customer are eligible for a cost recovery request. These costs include, but are not limited to the following:

- Expenses incurred by the customer for travel to the supplier location
- Re-billing of supplier responsible costs attributable to Quality Major Disruptions
- Incidental laboratory, machining, or retrofit costs
- Rescheduling of vehicle orders

In such cases, these charges shall have complete supporting documentation.

**5.6.2.8** Costs that are ineligible for a cost recovery request include, but are not limited to, the following:

- Excessive or unreasonable man-hours
- Cost of nonconforming scrap parts

**5.6.2.9** Manufacturing and Service Part cost recoveries less than US \$50,000, with no supplier response, can be debited through the financial organization to the supplier after six weeks from issuance of cost recovery.

**5.6.2.10** Cost recovery charges issued against GMNA Containerization are issued for the purpose of tracking costs associated with returnable dunnage. GMNA is not a cost center and has no funding allocated toward the payment of cost recoveries. Does not apply to Warranty Cost Recoveries.

**NOTE:** Cost recoveries issued to GMNA Containerization must have **\$0** listed in the negotiated cost field of the PRR.

**5.6.2.11** For Warranty Cost Recoveries and for regions utilizing charges other than \$55 US per hour labor and \$500 US per minute downtime, the issuing location should use the additional cost field in the cost recovery portion of the PRR to enter the appropriate value (in US dollars) to be charged back. When using this method for cost recoveries, the issuing location should not enter data into the downtime minutes and man-hours fields.

**5.6.3 Cost Recovery Response**

The supplier shall provide a response to any cost recovery request issued to them by the customer.

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#### 5.6.4 Appeal Process

The supplier may appeal a cost recovery request. To appeal, the supplier shall use the following process.

**5.6.4.1** If the issuing location and the supplier do not agree, and the supplier wants to pursue the appeal process, the appeal should be directed to the Quality Management at the issuing location.

**5.6.4.2** The appeal process shall be concluded within six weeks from the date the cost recovery was issued.

**5.6.4.3** The supplier shall initiate any appeal within 15 calendar days of issuance of the cost recovery request by contacting the customer location initiating the request and providing written objective evidence. Failure to reply or appeal within 15 calendar days may result an automatic debit of the cost recovery amount.

**NOTE:** An electronic response in GQTS is required in addition to the written appeal with objective evidence.

**5.6.4.4** The supplier shall provide objective evidence that the charge is inaccurate. If the customer and supplier agree on a revised cost, the cost recovery request shall be amended by the issuing location and the revised amount shall be debited or invoiced to the supplier.

If no agreement is reached between the customer and supplier, the supplier may then appeal to the customer purchasing buyer. If the customer buyer and supplier agree on a revised cost, the cost recovery request shall be amended and the revised amount shall be debited or invoiced to the supplier. If no agreement is reached within six weeks of issuance of the cost recovery request, and the customer has approved no extension, the original cost requested may be debited or invoiced to the supplier. All Cost recovery requests equal to or greater than US \$50,000, where agreement between the issuing location and the supplier can not be reached, shall be approved by the requestor's Purchasing Director before debit to the supplier.

## 6 Controlled Shipping

### 6.1 General

Controlled Shipping is a demand by the customer that a supplier put in place a redundant inspection process to sort for a specific nonconformance, while implementing a root-cause problem solving process. The redundant inspection is in addition to normal controls. The data obtained from the redundant inspection process is critical as both a measure of the effectiveness of the secondary inspection process and the corrective actions taken to eliminate the initial nonconformance.

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Two levels of Controlled Shipping exist:

- a) **Controlled Shipping - Level 1** includes a problem solving process as well as a redundant inspection process. The supplier's employees at the supplier's location enact the inspection process in order to isolate the customer from receipt of nonconforming parts/material.
- b) **Controlled Shipping - Level 2** includes the same processes as Controlled Shipping - Level 1, with an added inspection process by a third party representing the customer's interests specific to the containment activity. The third party is selected by the supplier, approved by the customer, and paid for by the supplier. Suppliers may select the third party from an approved listing maintained by the customer.

The 3<sup>rd</sup> party or a Customer representative will perform audits. The data obtained from the 3<sup>rd</sup> party redundant inspection process as well as the audits are critical as both a measure of the effectiveness of the secondary inspection process and the corrective actions taken to eliminate the initial nonconformance.

In special cases, the Controlled Shipping - Level 2 inspection may be required to be performed outside the supplier's facilities at a facility deemed appropriate by the customer.

**Note: The term "SQE" in Controlled Shipping refers to the Supplier Quality Engineer, Quality Systems Engineer, CS Coordinator, 3<sup>rd</sup> Party Provider Quality Engineer, or other approved Customer Representative.**

**Note: The latest regional/divisional Controlled Shipping letter templates can be found in the Quality library of GM SupplyPower: Controlled Shipping Forms**

## 6.2 Criteria for application for Controlled Shipping-Level 1 or 2

The customer makes the determination whether the supplier can effectively correct the nonconforming material situation through the PR/R process and isolate the customer from the problem. One or several of the following issues may be considered for implementation of Controlled Shipping:

- Repeat PRR's
- Supplier's current controls are not sufficient to ensure conformance to requirements
- Duration, quantity, and/or severity of the problem
- Internal/External Supplier data
- Controlled Shipping Level 1 failures
- Major Disruptions
- Quality Problem in the field (i.e. PRTS, Warranty, JD Power)

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- Supply Power bulletins

Based on consideration of the above, the customer decides whether Level 1 or Level 2 would be appropriate.

**6.3 Controlled Shipping - Level 1 Process****6.3.1 Assessment**

- a) Customer Manufacturing/Assembly centers or SQE make a request for CS1, referencing the non-conformances/PRR's, observations at the supplier, the supplier's internal /external data, or other criteria for application.
- b) The Customer SQE reviews the request/ documentation to ensure it complies with the criteria for application, and if applicable, makes the decision to place the supplier in CS1. This decision may also involve a Manager.

**6.3.2 Entry and Implementation**

- a) SQE verbally notifies the supplier (staff level) they are being placed in CS1 and that a confirmation letter will follow.
- b) The SQE or an approved designate, via GQTS, sends formal confirmation to the supplier a Controlled Shipping Level 1 Entry letter (GM 1927-55), addressed to the supplier's Top Management
- c) SQE contacts the supplier (via conference call or meeting) to:
  - Review the non-conformance that resulted in the CS1 entry.
  - Review and approve the supplier's containment process which includes:
    - Data collection utilizing an I-chart (GM 1927-66)
    - Communication back to Customer (including frequency)
    - Control of non-conforming product
  - Review and approve the supplier's escalation/reaction plan for the containment activity.
  - Establish boundary samples and/or specifications for acceptance/rejection of the parts.
  - Establish exit criteria for the CS1.
- d) SQE requests the support of the Customer buyer if the supplier is uncooperative in implementing CS1 to the Customer's requirements.
- e) Supplier does the following:
  - Ensure understanding of the nonconformance.
  - Return the confirmation reply as required (GM 1927-53).
  - Develop an escalation/action plan.
  - Immediately establish a separate containment activity area at their location that is acceptable to Customer.
  - Notify additional customer facilities that use the same part, inform them of the nonconformance, and provide containment activities as necessary.

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- Track breakpoints of nonconforming material. (Purge pipeline of suspect material, i.e. at Customer's facility, in transit and at all storage locations.)
  - Mark individual parts, material, and containers, as agreed upon by Customer, to identify parts certified for production.
  - Provide proper layout and instruction documents, space and tooling to perform Controlled Shipping - Level 1.
  - Commence the sort activities and display the results in a public and visible location.
- f) Buyer does the following:
- If requested, intervene to support the SQE if the supplier is uncooperative in implementing CS1 per Customer's requirements.
  - Notify Purchasing Manager if intervention is required.

**6.3.3 Monitor and Check**

Supplier does the following:

- a) Perform a redundant inspection of all suspect non-conforming products per the agreed upon process and ensure defect free parts/material are delivered to Customer.
- b) Determine and demonstrate the root cause to the Customer SQE (Drill Deep – GM 1927-84.)
- c) Develop, implement and validate the permanent corrective actions, along with improved process controls (i.e., error proofing, layered audits, setup checklists, standardized work, operator training and certification program, etc.)
- d) Implement lessons learned by conducting a Read Across (GM 1927-69) as required.
- e) Conduct a daily management meeting at the sort location to review the results, ensure the corrective actions taken are effective, and plan required changes.
- f) Update all applicable documentation, (i.e. Process Control Plan, PFMEA, Flow Diagram, and Standardized work Instructions etc).
- g) Document containment data in I-chart format (GM 1927-66.)
- h) Communicate the action plan, inspection status, and results of problem resolution activities to the Customer in a format and with a frequency agreed to by the Customer representative.
- i) If the PRR has been written around a dimensional issue involving a PQC, KPC, or critical measurement point, the data submission frequency shall revert to the frequency defined in the GP12 plan for a period of 30 production days or until capability is reestablished.

SQE does the following:

- a) Monitor supplier's containment data (I-chart.)

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- b) Verify the supplier has a documented process control validation program in place (such as job setups, setup error proofing, process error proofing, layered auditing, operator training & certification etc.)
- c) Verify supplier's root cause analysis and corrective actions.

**6.3.4. Verification for Exit**

Supplier does the following:

- a) Meet the defined exit criteria.
- b) Request exit from Controlled Shipping - Level 1 and provide supporting documentation and assessments on performance and corrective actions to the appropriate Customer representative (Customer plant representative will be notified if required.)

SQE does the following:

- a) Conduct PCPA Audit (GM 1927-16), if applicable.
- b) Verify that the supplier has met all exit criteria. The Supplier is removed from CS1 after all exit criteria are met and the established time has expired without further non-conformances at the Customer Assembly /Manufacturing Center, or coming out of the Supplier's process.
- c) Notify the supplier verbally that they have met the criteria and that they will be removed from CS1 upon receipt of the CS1 exit letter.
- d) Issue a Controlled Shipping Exit letter (GM 1927-56) to the supplier for official notification that they have met the exit criteria.
- e) Forward a copy of the exit letter to the Customer distribution. (Include CS Coordinator and GQTS Coordinator if applicable.)
- f) Enter the exit information into GQTS.

**6.3.5 SQE Responsibility**

- a) Confirm supplier's non-conformance and reviews their quality performance.
- b) Verbally notify the supplier's management of the non-conformance and entry into CS1.
- c) Communicate CS1 requirements to the supplier (including exit criteria) via conference call or meeting.
- d) Complete appropriate documentation for formal notification to the supplier.
- e) Verify and approve supplier's Controlled Shipping plan/process.
- f) Monitor supplier's containment data (I-chart).
- g) Verify supplier's root cause analysis and corrective actions.
- h) Verify the supplier's process control improvements and validation plan/frequency.
- i) Conduct PCPA audit, if applicable.
- j) Verbally notify the supplier's management of their removal from CS1.
- k) Complete appropriate documentation for formal notification of removal from CS1.
- l) Enter the exit information into GQTS.

**Supplier Quality Processes and Measurements Procedure****GP – 5****6.3.6 Buyer Responsibility**

- a) If requested, intervene to support the SQE if the supplier is uncooperative in implementing CS1 per Customer's requirements.
- b) Notify Purchasing Manager if intervention is required.

**6.3.7 Supplier Responsibility**

- a) Ensure understanding of the nonconformance.
- b) Return the confirmation reply as required.
- c) Develop an escalation / action plan.
- d) Implement a CS1 containment activity to ensure defect free parts/material are properly identified and delivered to Customer.
- e) Notify additional Customer facilities that use the same part and inform them of the nonconformance.
- f) Purge pipeline of suspect material.
- g) Conduct a daily management meeting at the sort location.
- h) Determine root cause.
- i) Develop, implement, and validate permanent corrective actions and process controls.
- j) Update all applicable documents.
- k) Document containment data in I-chart format.
- l) Communicate action plans, inspection status, and results of problem resolution activities to the Customer in a format and with a frequency agreed to by the Customer representative.
- m) Meet the defined exit criteria.
- n) Request exit from Controlled Shipping - Level 1 with appropriate supporting documentation.

**6.4 Controlled Shipping – Level 2 Process****6.4.1 Assessment**

- a) Customer Manufacturing/Assembly centers or SQE make a request for CS2, referencing the non-conformances/PRR's, observations at the supplier, the supplier's internal /external data, or other criteria for application.
- b) The Customer SQE reviews the request/documentation to ensure it complies with the criteria for application, and if applicable, makes the decision to place the Supplier in CS2. This decision may also involve a SQ Manager.

**6.4.2 Entry/Implementation Phase:**

- a) The SQE verbally notifies the supplier that:
  - Supplier is being placed on CS2.

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- Containment must be initiated immediately, in order to protect the customer.
  - Entry letter will follow.
  - Supplier must contract an authorized 3<sup>rd</sup> party CS Provider.
  - SQE will be holding a kickoff meeting/conference call.
- b) The SQE or approved designate, via GQTS, sends formal confirmation to the supplier a Controlled Shipping Level 2 Entry letter (GM 1927-57), addressed to the supplier's Top Management.
- c) SQE and the Supplier complete a Kickoff Worksheet (GM 1927-59), if applicable, and agree on 3<sup>rd</sup> party provider.
- d) Supplier contacts a Controlled Shipping 3<sup>rd</sup> party and issues a purchase order for Controlled Shipping Level 2 activities within 24 hours of receiving the CS2 letter.
- e) Supplier returns confirmation reply as required (GM 1927-53.)
- f) SQE and 3<sup>rd</sup> party provider hold a kickoff meeting or conference call with the Supplier's Quality Manager and Plant Manager to:
- Review the non-conformance that resulted in the CS 2 entry.
  - Review and approve the supplier's containment process which includes:
    - Data collection utilizing an I-chart (GM 1927-66.)
    - Communication back to Customer (including frequency.)
    - Control of non-conforming product.
  - Review 3<sup>rd</sup> party provider actions/assessments as required.
  - Review and approve the supplier's escalation/reaction plan for the containment activity.
  - Establish boundary samples and/or specifications for acceptance/rejection of the parts.
  - Establish exit criteria for CS2.
  - SQE obtains signatures from appropriate Customer and Supplier Representatives on CS2 Purchase Order Addendum when required.
- g) Supplier performs a redundant inspection of all suspect nonconforming products per the agreed upon process to ensure defect free parts (CS1). CS1 is a separate and independent inspection process from CS2
- h) Supplier notifies additional Supplier facilities that use the same part, informs them of the nonconformance, and provides containment activities as necessary.
- i) The 3<sup>rd</sup> Party Provider performs an additional redundant inspection of all suspect non-conforming products per the agreed upon process to ensure defect free parts are delivered to Customer.
- j) If applicable, 3<sup>rd</sup> party Provider Quality Engineer or Customer SQE reviews the Supplier's process and quality history, and completes the Assessment (GM 1927-52) and Matrix (GM 1927-51).
- k) SQE requests the support of the Customer buyer if the supplier is uncooperative in implementing CS2 and/ or supplying a purchase order number for 3<sup>rd</sup> party provider to Customer's requirements.
- l) Supplier submits irreversible corrective action plans to the QS9000/TS16949 registrar for review and/or assessment and authorizes QS9000/TS16949 registrar to submit the review and/or assessment findings to the Customer.

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- m) Buyer does the following:
- If requested, intervene to support the SQE if the supplier is uncooperative in implementing CS2 and/or supplying a purchase order number for 3<sup>rd</sup> party provider per Customer's requirements.
  - Notify Purchasing Manager if intervention is required.
- n) The Customer reserves the right to require all or portions of the standard CS2 process requirements (e.g., 3rd party redundant inspection, but no 3rd party provider assessment). This determination will be made by the Customer only.

**6.4.3 Monitor and Check Phase**

Supplier does the following:

- a) Perform a redundant inspection of all suspect non-conforming products per the agreed upon process and ensure defect free parts/material are delivered to Customer.
- b) Determine and demonstrate the root cause to the Customer SQE (Drill Deep-GM 1927-84.)
- c) Develop, implement and validate the permanent corrective actions, along with improved process controls (i.e., error proofing, layered audits, setup checklists, standardized work, operator training and certification program, etc.)
- d) Document containment data in an I-chart format (GM 1927-66.)
- e) Implement lessons learned by conducting a Read Across (GM 1927-69) as required.
- f) Conduct a daily management meeting at the sort location to review the results, ensure the corrective actions taken are effective, and plan required changes.
- g) Update all applicable documentation, (i.e. Process Control Plan, PFMEA, Flow Diagram, and Standardized work Instructions etc.)
- h) Communicate the action plan, inspection status, and results of problem resolution activities to the customer in a format and with a frequency agreed to by the Customer representative.

SQE does the following:

- a) Monitor supplier's containment data (I-chart.)
- b) Verify the supplier has a documented process control validation program in place (such as job setups, setup error proofing, process error proofing, layered auditing, operator training & certification etc.)
- c) Verify supplier's root cause analysis and corrective actions.
- d) Provides requirements to the supplier for exit package submission content by completing the CS2 exit package checklist form (GM 1927-54). Completion of the checklist does not impact the criteria established for the supplier to exit CS2, (see section 6.7).

**6.4.4 Verification for Exit**

Supplier does the following:

- a) Meet the defined exit criteria.

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- b) Request exit from Controlled Shipping - Level 2 and provide supporting documentation and assessments on performance and corrective actions to the appropriate customer representative (Customer plant representative will be notified if required.)

SQE does the following:

- a) Conduct PCPA Audit (GM 1927-16) or other appropriate Quality Audit, if applicable.
- b) Verify that the supplier has met all exit criteria. (May be performed by the 3<sup>rd</sup> party.)  
The Supplier is removed from CS2 after all exit criteria are met and the established time has expired without further non-conformances at the Customer Assembly /Manufacturing Center or coming out of the Supplier's process.
- c) Notify the supplier verbally that they have met the criteria and that they will be removed from CS2 upon receipt of the CS2 exit letter.
- d) Complete a CS2 exit checklist (GM 1927-54), as required, and issue a CS2 exit letter (GM 1927-58) to the supplier for official notification that they have met the exit criteria. (Distribute exit check sheet to any additional Customer resources who have responsibility for letter creation and distribution, if applicable.)
- e) Forward a copy of the exit letter to the Customer distribution. (Include any additional Customer resources who have GQTS update responsibility, if applicable.)
- f) Enter the exit information into GQTS.

**6.4.5 SQE Responsibility**

- a) Confirm supplier's non-conformance and review their quality performance.
- b) Verbally notify the supplier's management of the non-conformance and entry into CS2.
- c) Verify that the supplier's 3rd party provider selection is in accordance with the Customer's list of approved 3rd party providers.
- d) Hold kickoff meeting with 3<sup>rd</sup> party provider and supplier as specified in the Entry/Implementation phase.
- e) Complete appropriate documentation for formal notification to the supplier.
- f) Verify and approve supplier's Controlled Shipping plan/process.
- g) Monitor supplier's containment data (I-chart).
- h) If applicable, complete an Assessment and Assessment Matrix.
- i) Verify supplier's root cause analysis and corrective actions.
- j) Verify the supplier's process control improvements and validation plan/frequency.
- k) Conduct PCPA audit, if applicable.
- l) Verbally notify the supplier's management of their removal from CS2.
- m) Complete and distribute the appropriate documentation for formal notification of removal from CS2.
- n) Enter the exit information into GQTS.

**6.4.6 Buyer Responsibility**

- a) If requested, intervene to support the SQE if the supplier is uncooperative in implementing CS2 and/or supplying a purchase order number for 3<sup>rd</sup> party provider per Customer's requirements.

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- c) Notify Purchasing Manager if intervention is required.

**6.4.7 Supplier Responsibility**

- a) Ensure understanding of the nonconformance.
- b) Develop an escalation / action plan.
- c) Contact and issue a purchase order to the Controlled Shipping 3<sup>rd</sup> party for Controlled Shipping - Level 2 activities. The supplier is responsible for all costs of the Controlled Shipping third party for the activity.
- d) Return confirmation reply as required.
- e) Implement a CS2 containment activity to ensure defect free parts/material are properly identified and delivered to Customer.
- f) Purge pipeline of suspect material.
- g) Notify additional Customer facilities that use the same part and inform them of the nonconformance.
- h) If requested by the Customer, submit irreversible corrective action plans to the QS9000/TS16949 registrar for review and/or assessment.
- i) If requested by the Customer, authorize QS9000/TS16949 registrar to submit the review and/or assessment findings to the Customer.
- j) Conduct a daily management meeting at the sort location.
- k) Determine root cause.

**6.5 Containment Guidelines**

The intent of the Controlled Shipping containment guidelines is to outline and describe a rigorous process that insulates the customer assembly plant from the receipt of nonconforming parts and material. The Controlled Shipping containment guidelines are as follows:

- a) Containment area must be highly visible and properly lighted, equipped, etc.
- b) Containment area must have well defined efficient material flow including clearly identified areas for incoming and outgoing parts/material.
- c) Repairs will not be done in the containment area.
- d) Unless it is not feasible for the most effective containment, containment areas must be independent of the supplier production process
- e) Information boards (See 6.6) must prominently display nonconformances, measures, action plan and status, and results of the containment activity.
- f) Charts must be updated on a daily basis and reviewed by top supplier management.
- g) Problem solving must be formal, data driven and documented.
- h) Containment operators must have available to them proper job instructions, quality standards, boundary samples, tools, and equipment, etc.
- i) Operators must be properly trained.
- j) Preventive maintenance must be employed if required.

**6.6 Information Boards**

Information boards should prominently display the following:

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- a) Quality standards such as boundary samples, technical specifications, drawings, etc.
- b) Nonconformance descriptions and resolution action plans (including the CS2 entry letter, PRR, and Drill Deep responses)
- c) Process Control Plan highlighted to show where in the process the nonconformance occurred.
- d) Operator instructions, inspector instructions and training records.
- e) Trend charts and SPC charts, if applicable (I-Chart)
- f) Inspection Control Plan, Inspection Flow Diagram, and Inspection FMEA (CS2 only).
- g) The Control Plan Special Characteristics (CPSC) form for inspection item(s) (CS2 only).

**6.7 Exit criteria**

## 6.7.1 Exit criteria must:

- a) Include clear and measurable elements
- b) Be specific and relevant to the nonconformance issues to be addressed
- c) Require documentation to demonstrate corrective actions taken are permanent
- d) Remain constant for each nonconformance
- e) Include workshops if requested by the Customer

6.7.2 The default exit criteria will be used when no other exit criteria is defined. The default criteria is listed below and must be provided to the customer representative when requesting removal from Controlled Shipping:

- a) Twenty (20) working days of data from the containment activity, and a summary, which verifies that the normal production controls are effective for controlling the discrepancy(ies) identified in the Controlled Shipping activity. The time begins accumulating from the date of implementation of permanent corrective action.
- b) Documentation showing the root cause was identified and verified
- c) Documentation indicating that corrective action was implemented and validated
- d) Copies of all documentation revised as required (control plan, FMEAs, process flow diagram, operator's instructions, etc.)
- e) Documentation indicating that every effort was taken to implement error proofing.
- f) If required, a Read Across (documented on GM 1927- 69) on all PRR's issued for a given time frame as indicated on the Controlled Shipping Letter or defined at the Kick-off meeting.

**7 New Business Hold****7.1 General**

This section defines the Global New Business Hold Process. (See GM 1927-67.)

**Supplier Quality Processes and Measurements Procedure****GP – 5****7.2 Placing a supplier on New Business Hold**

Suppliers with ongoing quality problems or suppliers without QS-9000/TS16949 certification, may be placed on New Business Hold (NBH). The process to place a supplier on NBH is as follows:

1. Customer region or division communicates issues with creativity team
2. Supplier Quality recommends hold and submits "Hold Form" (Quad Report - GM 1927-71)
3. GP SQ solicits worldwide agreement (all commodities, all regions)
4. If agreement is reached, the involved commodity and GP Supplier Quality issue a joint letter to the supplier.
5. GP Supplier Quality creates a NBH PRR for the involved Supplier Duns in the Global Quality Tracking System (GQTS)
6. Purchasing and Supplier Quality review the improvement expectations with the supplier
7. Responsible functional organization monitors supplier's progress

**7.3 Removing a supplier from New Business Hold**

Once a supplier has met the defined exit criteria, the process to remove a supplier from NBH is as follows:

1. The responsible Supplier Quality organization provides a recommendation to GP Supplier Quality to remove the hold
2. GP Supplier Quality solicits worldwide agreement
3. Upon agreement, the involved commodity and GP Supplier Quality issue a joint letter to the supplier
4. GP Supplier Quality closes the NBH PRR in GQTS

**8 Supplier Measurements****8.1 General**

This section defines the supplier measurements used by the customer to monitor supplier quality performance. These measures are used in the sourcing metrics and Quality Performance Reports to help guide future business decisions, and help direct resources to the appropriate areas that require additional focus.

**8.2 Major Disruption**

Major Disruptions are tracked by the issuance of PRR's. Major Disruption categories include: Premium Transportation, Downtime, Plant Disruption, Stockout and Field Action. Premium Transportation disruptions relate to transportation failures, while Field Action disruptions relate

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to significant Warranty issues. Plant Disruption, Stockout and Downtime PRR's are produced for quality related issues.

- For common application and definitions, see "Major Disruption Interpretation Flow Chart" (section 10). The final authority to designate appropriate applications of Major Disruptions lies with Group Quality / Quality Systems with input from customer units. Supplier Quality is responsible for the correctness of GQTS records that reflect the classifications given by Group Quality.
- A problem that affects multiple plants is considered one Major Disruption.
- A problem that could be classified as more than one type of Major Disruption shall be issued under one PRR with one type of Major Disruption.

**8.3 Parts Per Million (PPM)**

On a monthly basis, the customer tracks and reports the PPM for each supplier duns number. See Section 9.3 for how PPM is calculated.

**8.4 Incidents of Controlled Shipping**

On a weekly basis, the customer tracks and reports the number of incidents of Controlled Shipping Levels 1 and 2 for each supplier manufacturing location.

**8.5 PRR Measures**

On a weekly basis, the customer tracks the number of PRR's for each supplier manufacturing location to determine which suppliers require additional focus.

On a monthly basis, the customer tracks the PRR "Time to Implementation." This measure represents the time from PRR origination to the time when the supplier completes the PRR response.

On a monthly basis, the customer tracks the PRR "Time to Closure." This measure represents the time from when the supplier completes the PRR response to the time when the customer approves the PRR response.

**8.6 New Business Hold**

On a weekly basis, the customer tracks and reports all supplier manufacturing locations unable to quote new business due to quality performance and/or lack of QS/TS certification.

**9 EXAMPLES****9.1 Quantity Suspect**

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The estimated nonconforming quantity is determined by an actual sort of suspect material to determine the percent defective, and applying that percent defective across all containers of material with same lot number and ship date.

For example: A container of material is found to have a discrepant part. A sort of the remaining parts in the container reveals a total of 4 non-conforming parts out of a total of 70 inspected. Two additional containers (100 parts per container) of material are on hand with the same lot number and ship date. The plant chooses to send these two Containers back to the supplier to verify part quality.

Quantity Checked:	70	
Quantity Nonconforming:	4	
Quantity Suspect:	270	(2 full boxes and the 70 originally suspected parts)
Est. Quantity Nonconforming:	15	( $4 / 70 * 270 = 15$ ) (System-calculated number that is included in PPM calculation)

### 9.2 Adding quantities to an existing PRR

Following are several scenarios:

- Today is August 11 and a PRR was issued by a location at 8 AM. At 11 AM, a second location inputs a PRR for the same problem to the same supplier. The customer should check for like lot and run numbers, etc., however, given the short period of time between issue dates / times, it would be reasonable to add an additional detail line item to the existing PRR.
- A previous PRR was issued by a location in the USA on August 8. Another customer location in Brazil has found the same nonconformance on August 9. The Brazil location has reviewed the supplier's response and noted that the shipping date for conforming material would be August 10. Brazil MUST add an additional detail line item to the existing PRR. (Refer to Section 5.3.7)

### 9.3 Calculating Supplier PPM

PPM is impacted when both of the following conditions exist:

- Quality PRR is written with quantity discrepant and
- There are receipts for referenced part and duns number within the previous twelve months.

PPM for a supplier manufacturing duns is calculated monthly using the following formula:

1. Total all the "estimated quantity nonconforming" for all part numbers for that location  
Note: Actual quantity nonconforming is used for supplier initiated PRR's.
2. Divide by total receipts for that location

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3. Multiply by 1,000,000.

**9.4 Quantities for Label Issues or Bulk Materials for Product**

Received at Manufacturing Locations (Service Parts Warehousing will count 100% of the mislabeled parts as nonconforming)

A PRR is written to a supplier for mislabeling a pallet of ten boxes of screws, each box containing 1,000 screws.

If this is the supplier's first labeling offense:

Quantity Checked:	1000
Quantity Nonconforming:	1
Quantity Suspect:	1000
Est. Quantity Nonconforming:	1

If this is the supplier's second labeling offense:

Quantity Checked:	1000
Quantity Nonconforming:	1
Quantity Suspect:	1000
Est. Quantity Nonconforming:	1

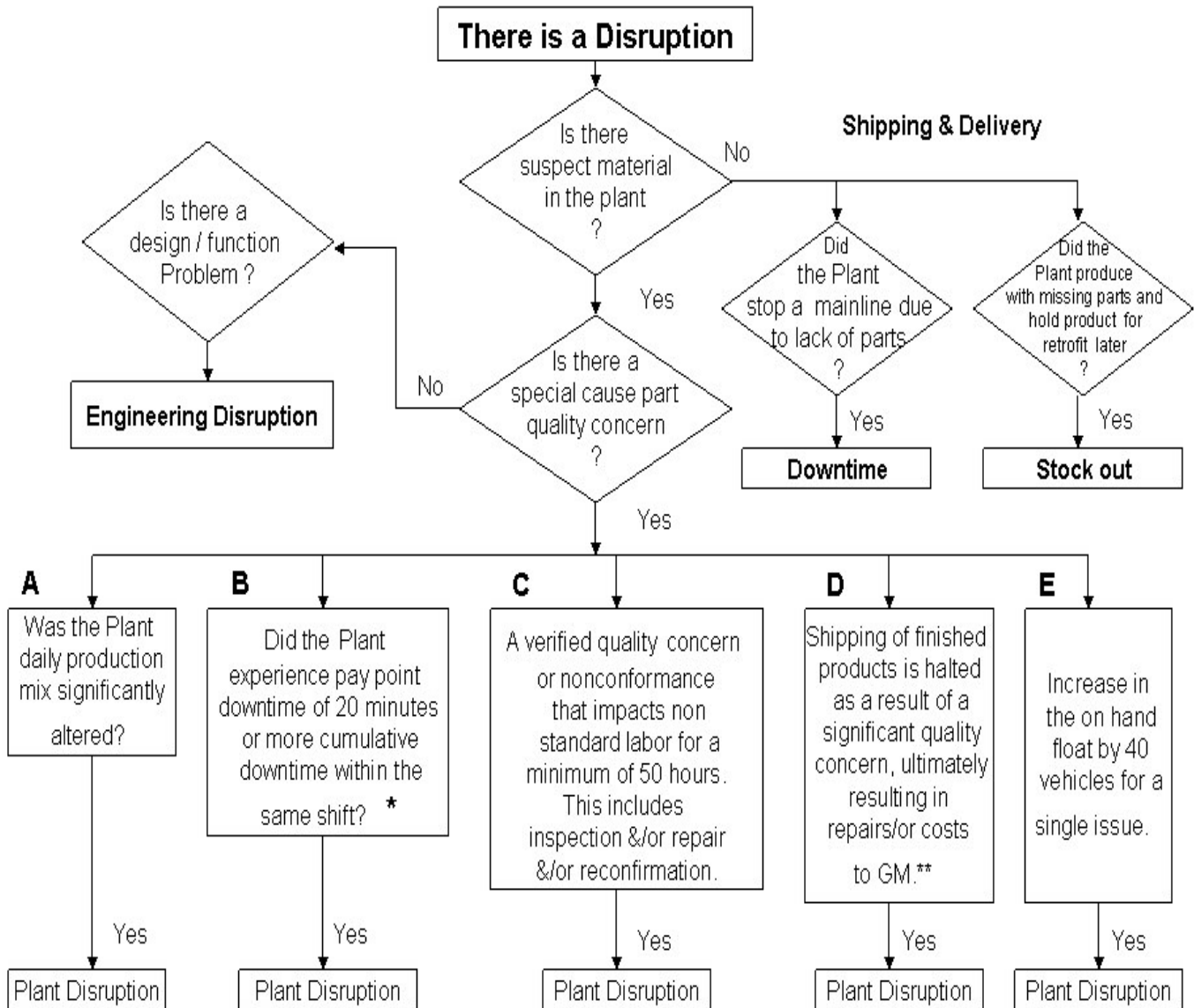
If this is the supplier's third labeling offense:

Quantity Checked:	1000
Quantity Nonconforming:	1000
Quantity Suspect:	1000
Est. Quantity Nonconforming:	1000

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**10. Major Disruption Interpretation Flow Chart**

## Global Assembly Plant Disruption - Flowchart



\* This excludes stock outs or mechanical breakdowns, but includes quality issues.

\*\* Engineering buy-off resulting in no repair is included.