

GENERAL MOTORS

IATF 16949 - Customer Specific Requirements



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SUMMARY OF IATF 16949 SECTIONS WITH CUSTOMER-SPECIFIC CONTENT

1 Scope.....4

 1.1 Scope – General*4

2 References..... 4

3 Terms and definitions..... 5

 3.1 Terms and definitions for the automotive industry* 5

4 Context of the organization.....6

5 Leadership.....7

6 Planning.....8

7 Support.....9

 7.5.3.2.1 Record retention*11

8 Operation.....11

 8.2.3.1.2 Customer designation special characteristics*12

 8.3.3.1 Product design input*13

 8.3.3.3 Special Characteristics*13

 8.3.4.4 Product approval process*14

 8.3.5.2 Manufacturing process design output*14

 8.3.6.1 Design and development changes – supplemental*14

 8.4.2.4.1 Second-party audits*15

 8.4.2.5 Supplier development* 16

 8.5.1.1 Control Plan* 16

8.5.1.2 Standardized work – operator instructions and visual standards*	16
8.5.1.6 Management of production tooling and manufacturing, test, inspection tooling and equipment*	17
8.5.6.1 Control of changes – supplemental*	18
8.5.6.1.1 Temporary change of process controls*	18
8.6.2 Layout inspection and functional testing*	18
8.6.3 Appearance items*	18

9 Performance evaluation

9.1.1.1 Monitoring and measuring of manufacturing processes*	19
9.1.2.1 Customer satisfaction – supplemental*	20
9.2.2.2 Quality management system audit*	21
9.2.2.3 Manufacturing process audit*	22
9.2.2.4 Product audit*	23

10 Improvement

10.2.3 Problem solving*	25
10.2.4 Error-proofing*	25
10.3.1 Continual improvement – supplemental*	25

* Denotes customer-specific content

1 Scope

1.1 Scope General

IATF 16949:2016, First Edition, Oct 1, 2016, “Automotive Quality Management System Standard,” **ISO 9001:2015, Fifth Edition**, Sept 15, 2015, “Quality Management Systems – Requirements”, and this document defines General Motors fundamental quality system requirements for organizations where automotive customer-specified parts for production and/or service are manufactured. Third party certification to IATF 16949 shall meet the following conditions:

- The certification scope must include both IATF 16949 and the accompanying IATF 16949 GM-Customer Specific Requirements,
- The certification must be conducted in compliance with the IATF recognized automotive certification scheme by a Certification Body currently contracted and recognized by the IATF.

All **IATF 16949:2016** requirements, including the requirements of this document, shall be addressed in the organization’s quality management system.

The English language version of IATF 16949:2016 or related reference documents shall be the official version for purposes of third-party registration.

Sanctioned translations shall:

- Be for reference only
- Reference the English language as the official version
- Not contain ISO 9001:2015 text verbatim
- Include an appropriate copyright statement

Any other language translations are not authorized.

Organizations shall refer to the CG4338 GM 1927 03 Supplier Quality Statement of Requirements (SOR), for requirements for organizations supplying parts and materials to General Motors.

1.2 IATF 16949:2016 Deviations (Waivers)

Organizations requesting deviations (waivers) for IATF 16949:2016 Certification must contact their GM SQE and complete the GM 1927 70 SQ IATF 16949 Certification Waiver request and obtain GM Supplier Quality Leadership approval. The completed and approved IATF 16949 Certification Waiver request will be stored in GM’s Supplier Certification Management System (SCMS) under the requesting Organization’s DUNS.

2 Normative references

2.1 Normative and informative references

No additional requirements.

3 Terms and definitions

3.1 Terms and definitions for the automotive industry

Accredited Laboratory

An accredited laboratory is one that has been independently evaluated for technical competence. The criteria for evaluation are based on ISO/IEC 17025, or national equivalent. Accreditation is performed by qualified agencies (public or private) operating in accordance with ISO/IEC 17011.

NOTE: The above definition also applies to the reference manuals in Section 2 of this document and currently in effect.

Active Part

An active part is one currently being supplied to the customer for original equipment or service applications. The part remains active until tooling scrap authorization is given by the appropriate customer activity. For parts with no customer-owned tooling or situations where multiple parts are made from the same tool, written confirmation from the customer Purchasing activity is required to deactivate a part.

NOTE: For bulk material, “active part” refers to the bulk material contracted, not the parts that are subsequently produced from that material.

Aftermarket Parts

Aftermarket parts are replacement parts not procured or released by OEM for service part applications which may or may not be produced to original equipment specifications.

Accessory Parts

Parts manufactured to GM standards, that are procured or released by GM, and are mechanically attached or electronically connected to the vehicle before or after final delivery to the customer.

Bypass

Proactive approach to address potential error proofing failures with a defined and approved process which addresses the risk as defined in the PFMEA, considering safety, severity and overall RPL rating. Bypass process is established before a device failure. Bypass differs from a deviation process as a deviation process is a reactive process.

Customer

References to “customer” in **IATF 16949:2016** and this document shall be interpreted as the Procuring Division of General Motors for organizations pursuing third party registration to **IATF 16949:2016** to satisfy General Motors **sourcing requirements** third party quality system assessment registration.

Service Parts

Replacement parts manufactured to OEM specifications, which are procured or released by the OEM for service part application.

Severity Score

Severity Score for a GM supply organization is impacted when quality SPPS (Supplier Practical Problem Solving) records are written with a documented impact towards the GM final customer, GM manufacturing plant, or GM product (vehicle, powertrain, or component). A Severity Matrix is used to equate the Plant and or Customer Impact resulting in a Severity Score.

Organization

Organizations are defined as providers of a) production materials, b) production, service, and accessory parts, or c) heat treating, plating, painting, or other finishing services, directly to General Motors or other customers subscribing to this document.

NOTE: See **IATF 16949:2016**, Section 3, *Terms, and definitions*.

Suppliers

Suppliers are defined as organizations that are providers of: a) production materials, b) production, service, and accessory parts, or c) heat treating, plating, painting, or other finishing services, directly to an organization who is a provider of General Motors or other customers subscribing to this document.

NOTE: The term “tier supplier(s)” refers to suppliers at any tier level in the automotive supply chain.

4 Context of the organization

No additional requirements.

4.1 Understanding the organization and its context

No additional requirements.

4.2 Understanding the needs and expectations of interested parties

No additional requirements.

4.3 Determining the scope of the quality management system

4.3.1 Determining the scope of the quality management system – supplemental

No additional requirements.

4.3.2 Customer-specific requirements

No additional requirements.

4.4 Quality management system and its processes

4.4.1

No additional requirements.

4.4.1.1 Conformance of products and processes

No additional requirements.

4.4.1.2 Product safety

No additional requirements.

4.4.2

No additional requirements.

5 Leadership

5.1 Leadership and commitment

5.1.1 General

No additional requirements.

5.1.1.1 Corporate responsibility

No additional requirements.

5.1.1.2 Process effectiveness and efficiency

No additional requirements.

5.1.1.3 Process owners

No additional requirements.

5.1.2 Customer focus

No additional requirements.

5.2 Policy

5.2.1 Establishing the quality policy

No additional requirements.

5.2.2 Communicating the quality policy

No additional requirements.

5.3 Organizational roles, responsibilities, and authorities

5.3.1 Organizational roles, responsibilities, and authorities – supplemental

No additional requirements.

5.3.2 Responsibility and authority for product requirements and corrective actions

No additional requirements.

6 Planning

6.1 Actions to address risks and opportunities

No additional requirements.

6.1.1 and 6.1.2

No additional requirements,

6.1.2.1 Risk analysis

No additional requirements.

6.1.2.2 Preventive action

No additional requirements.

6.1.2.3 Contingency plans

No additional requirements.

6.2 Quality objectives and planning to achieve them

6.2.1 and 6.2.2

No additional requirements.

6.2.2.1 Quality objectives and planning to achieve them – supplemental

No additional requirements.

6.3 Planning of changes

No additional requirements.

7 Support

7.1 Resources

7.1.1 General

No additional requirements

7.1.2 People

No additional requirements

7.1.3 Infrastructure

No additional requirements

7.1.3.1 Plant, facility, and equipment planning

No additional requirements

7.1.4 Environment for the operation of processes

No additional requirements

7.1.4.1 Environment for the operation of processes – supplemental

No additional requirements

7.1.5 Monitoring and measuring resources

No additional requirements

7.1.5.1 General

No additional requirements

7.1.5.1.1 Measurement system analysis

No additional requirements

7.1.5.2 Measurement traceability

No additional requirements

7.1.5.2.1 Calibration/verification records

No additional requirements

7.1.5.3 Laboratory requirements

No additional requirements

7.1.5.3.1 Internal laboratory

No additional requirements

7.1.5.3.2 External laboratory

No additional requirements

7.1.6 Organizational knowledge

No additional requirements

7.2 Competence

7.2.1 Competence – supplemental

No additional requirements

7.2.2 Competence – on-the-job training

No additional requirements

7.2.3 Internal auditor competency

No additional requirements

7.2.4 Second-party auditor competency

No additional requirements

7.3 Awareness

No additional requirements

7.3.1 Awareness – supplemental

No additional requirements

7.3.2 Employee motivation and empowerment

No additional requirements

7.4 Communication

7.5 Documented information

7.5.1 General

No additional requirements

7.5.1.1 Quality management system documentation

No additional requirements

7.5.2 Creating and updating

No additional requirements

7.5.3 Control of documented information

No additional requirements

7.5.3.1 and 7.5.3.2

No additional requirements

7.5.3.2.1 Record retention

The organization's business records shall be retained as specified in GMW15920. Organizations can purchase GMW documents from IHS at www.global.ihs.com

7.5.3.2.2 Engineering specifications

No additional requirements

8 Operation

8.1 Operational planning and control

8.1.1 Operational planning and control — supplemental

No additional requirements

8.1.2 Confidentiality

No additional requirements

8.2 Requirements for products and services

8.2.1 Customer communication

No additional requirements

8.2.1.1 Customer communication — supplemental

No additional requirements

8.2.2 Determining the requirements for products and services

No additional requirements

8.2.2.1 Determining the requirements for products and services - supplemental

No additional requirements

8.2.3 Review of the requirements for products and services

No additional requirements

8.2.3.1

No additional requirements

8.2.3.1.1 Review of the requirements for products and services — supplemental

No additional requirements

8.2.3.1.2 Customer-designated special characteristics

The organization shall follow General Motors **Key Characteristic Designation System Process GMW15049**. Key Characteristics shall be applied as per IATF 16949:2016 8.3.3.3 Special Characteristics.

8.2.3.1.3 Organization manufacturing feasibility

No additional requirements

8.2.3.2

No additional requirements

8.2.4 Changes to requirements for products and services

No additional requirements

8.3 Design and development of products and services

8.3.1 General

No additional requirements

8.3.1.1 Design and development of products and services – supplemental

No additional requirements

8.3.2 Design and development planning

No additional requirements

8.3.2.1 Design and development planning – supplemental

No additional requirements

8.3.2.2 Product design skills

No additional requirements

8.3.2.3 Development of products with embedded software

No additional requirements

8.3.3 Design and development inputs

No additional requirements

8.3.3.1 Product design input

All operations shall be analyzed for risk using a PFMEA. Product requirements shall be identified, and failure modes comprehended in the PFMEA. Risk Priority Levels (RPL) shall be consistently applied using Severity, Occurrence, and Detection ranking tables. Severity shall be based on all risks such as organization risk, customer risk, and end user risk.

8.3.3.2 Manufacturing process design input

No additional requirements

8.3.3.3 Special characteristics

The organization shall have a process to identify critical operations within their manufacturing process.

8.3.4 Design and development controls

No additional requirements

8.3.4.1 Monitoring

No additional requirements

8.3.4.2 Design and development validation

No additional requirements

8.3.4.3 Prototype program

No additional requirements

8.3.4.4 Product approval process

The organization shall comply with the AIAG Production Part Approval Process (PPAP) manual and CG4338 GM 1927 03 Supplier Quality SOR to meet this requirement.

8.3.5 Design and development outputs

No additional requirements

8.3.5.1 Design and development outputs – supplemental

No additional requirements

8.3.5.2 Manufacturing process design output

The organization shall have a method to identify, control, and monitor the high-risk items on those critical operations.

There shall be rapid feedback and feed forward between inspection stations and manufacturing, between departments, and between shifts.

8.3.6 Design and development changes

No additional requirements

8.3.6.1 Design and development changes – supplemental

All design changes, including those proposed by the organization, shall have written approval by the authorized customer representative, or a waiver of such approval, prior to production implementation. See also AIAG **Production Part Approval Process (PPAP)** manual.

8.4 Control of externally provided processes, products, and services

8.4.1 General

8.4.1.1 General - supplemental

No additional requirements

8.4.1.2 Supplier selection process

No additional requirements

8.4.1.3 Customer-directed sources (also known as “Directed–Buy”)

No additional requirements

8.4.2 Type and extent of control

No additional requirements

8.4.2.2 Statutory and regulatory requirements

No additional requirements

8.4.2.3 Supplier quality management system development

No additional requirements

8.4.2.3.1 Automotive product-related software or automotive products with embedded software

No additional requirements

8.4.2.4 Supplier monitoring

No additional requirements

8.4.2.4.1 Second-party audits

Second-party auditors performing QMS audits must meet the requirements in clause 7.2.4 Second-Party Auditor Compliance in IATF 16949:2016 plus meet these additional requirements:

1. The organization must be IATF 16949:2016 certified and not on suspension.
2. The Second Party Auditor must be a qualified ISO Lead Auditor, or a qualified internal auditor with evidence of their successful completion of training, and a minimum of five internal ISO/TS 16949:2009 and/or IATF 16949:2016 audits under the supervision of a qualified lead auditor.

The organization may conduct (2nd party) audits of their supplier per their supplier development risk management analysis.

For initial certifications, the first second party audit should use the initial audit days from Table 5.2*. For subsequent second party audits use the recertification days Table 5.2*.

See **Automotive Certification Scheme for IATF 16949, Rules for Achieving and Maintaining IATF Recognition, section 5.2, Table 5.2 Minimum audit days.*

The second party audits shall identify an acceptable passing level and include a scoring or ranking to determine which suppliers have passed. The organization shall have documented evidence that they review and follow up on all non-conformances identified in the second-party audit with the intent to close these non-conformances.

8.4.2.5 Supplier development

When a supplier to an organization is so small as to not have adequate resources to develop a system according to IATF 16949:2016 or ISO 9001:2015, certain specified elements may be waived by the organization. The organization shall have decision criteria for determining “specially designated small suppliers”. Such decision criteria shall be in writing and applied consistently in the application of this provision. The existence and use of such decision criteria shall be verified by 3rd party auditors.

NOTE 1: ISO 9001:2015 and IATF 16949:2016 Minimum Automotive Quality Management System Requirements for Sub-Tier Suppliers contain fundamental quality management system requirements of value to any size of provider of production materials, production, service, and accessory parts, or heat treating, plating, painting, or other finishing services. There are a number of methods to implement a compliant system, so it is recognized that a simpler Quality Management System approach could be used for the smaller suppliers of organizations to which IATF 16949:2016 clause 8.4.2.3 applies.

NOTE 2: “Small” may also refer to volume supplied to automotive.

8.4.3 Information for external providers

8.4.3.1 Information for external providers - supplemental

No additional requirements

8.5 Production and service provision

8.5.1 Control of production and service provision

No additional requirements

8.5.1.1 Control plan

General Motors does not provide waivers to organizations for control plan approval because General Motors signatures on the Control Plan are not required.

The organization shall provide measurement, test, and inspection data which demonstrates that control plan requirements, sample sizes, and frequencies are being met when requested.

Sample sizes and frequencies shall be determined based on risk, occurrence of failure modes, and volume, to ensure that the customer is adequately protected from receiving the product represented by the inspection/tests before the results of the inspection/tests are known.

8.5.1.2 Standardized work – operator instructions and visual standards

Standardized work should include what, how, and why tasks are performed. All standardized work shall be followed.

Visual standards throughout the facility shall be common, including between facilities building the same platform/product for global quality.

Visual standards shall be clearly communicated to all team members that are affected and referenced in the standardized work.

Visual standards that differentiate “good” from “bad” shall satisfy customer requirements and be controlled.

8.5.1.3 Verification of job set-ups

No additional requirements

8.5.1.4 Verification after shutdown

No additional requirements

8.5.1.5 Total productive maintenance

No additional requirements

8.5.1.6 Management of production tooling and manufacturing, test, inspection tooling and equipment

Where warehouses or distribution centers (distributors) are remote sites, the requirements for management of production tooling may not be applicable.

8.5.1.7 Production scheduling

No additional requirements

8.5.2 Identification and traceability

No additional requirements

8.5.2.1 Identification and traceability — supplemental

No additional requirements

8.5.3 Property belonging to customers or external providers

No additional requirements

8.5.4 Preservation

No additional requirements

8.5.4.1 Preservation - supplemental

No additional requirements

8.5.5.1 Feedback of information from service

No additional requirements

8.5.5.2 Service agreement with customer

No additional requirements

8.5.6 Control of changes

No additional requirements

8.5.6.1 Control of changes – supplemental

The documented process shall require consideration of a production trial run for every product and process change. Results of the trial run shall be documented.

8.5.6.1.1 Temporary change of process controls

The organization shall have a process for both bypass and deviation. The alternative actions identified on the bypass list shall be customer approved and shall be reviewed using the methodology of the PFMEA to identify the risk. This review shall be documented.

8.6 Release of products and services

8.6.1 Release of products and services — supplemental

No additional requirements

8.6.2 Layout inspection and functional testing

After receiving production part approval (PPAP) and throughout the life of the product, the organization (*including suppliers of complex systems/sub-assemblies*) shall perform annually a complete measurement of all product dimensions shown on the latest design records (layout inspection to all dimensional requirements) on at least 5 parts.

Where tooling has multiple cavities, tools or centers, the organization shall conduct the annual layout inspection on at least 1 part for each cavity, tool or center, with a minimum overall sample size of 5 parts.

The results shall be documented and retained for the duration of the life of the program.

8.6.3 Appearance items

GM uses GM Appearance Approval Report (GM AAR) available to download from GM Supply Power.

8.6.4 Verification and acceptance of conformity of externally provided products and services

No additional requirements

8.6.5 Statutory and regulatory conformity

No additional requirements

8.6.6 Acceptance criteria

No additional requirements

8.7 Control of nonconforming outputs

8.7.1

No additional requirements

8.7.1.1 Customer authorization for concession

No additional requirements

8.7.1.2 Control of nonconforming product – customer-specified process

No additional requirements

8.7.1.3 Control of suspect product

No additional requirements

8.7.1.4 Control of reworked product

No additional requirements

8.7.1.5 Control of repaired product

No additional requirements

8.7.1.6 Customer notification

No additional requirements

8.7.1.7 Nonconforming product disposition

No additional requirements

8.7.2

No additional requirements

8 Performance evaluation

9.1 Monitoring, measurement, analysis, and evaluation

9.1.1 General

No additional requirements

9.1.1.1 Monitoring and measurement of manufacturing processes

The organization shall have a method for the employee to call or notify for help when an abnormal condition on the equipment or product occurs. A method to call or notify shall be available in all operational areas of the organization.

Sufficient alarm limits shall be established for escalation of abnormal conditions and shall match the reaction plan identified in the product's control plan.

9.1.1.2 Identification of statistical tools

No additional requirements

9.1.1.3 Application of statistical concepts

No additional requirements

9.1.2 Customer satisfaction

No additional requirements

9.1.2.1 Customer satisfaction – Supplemental.

New Business Hold

General Motors will notify the organization if the organization is placed in the Special Status of New Business Hold. General Motors can submit an IATF Performance Complaint against the organization based on the issues leading to the Special Status of New Business Hold. The Performance Complaint process follows the IATF Certificate Decertification Process*

****See Automotive Certification Scheme for IATF 16949, Rules for Achieving and Maintaining IATF Recognition, section 8.0.***

GM Quality Performance Requirements (also known as GM QPR)

Organizations shall achieve and maintain a Sourceability Level of 3, 4 or 5. If the organization's Sourceability Level falls below Level 3, a performance complaint will be submitted against the organization on behalf of GM. The submission of the performance complaint will lead to the initiation of the Certificate Decertification Process*.

*See Automotive Certification Scheme for IATF 16949, Rules for Achieving and maintaining IATF Recognition, section 8.1-8.7.

Quick Reference Guides explaining supplier performance requirements are available through <https://www.iatfglobaloversight.org/oem-requirements/quick-reference-guides/>

NOTE 1: Two conditions where a performance complaint is not submitted for Sourceability level < 3 are:

- Sourceability Level 0 – With no production receipts nor any quality SPPS records in the last 12 months; or
- Not certified to IATF 16949 and Mfg. DUNS number not included in any other site certification as a Remote Site or extended manufacturing site

NOTE 2: The GM system Sourceability Report will indicate a Sourceability Level of 1 or 2 for those organizations not meeting the GM Quality Performance Requirements.

Organizations shall refer to the **GM 1927 17 SQ Processes and Measurement Procedure**, for metrics and status definitions.

CSII (Controlled Shipping Level 2)

The organization shall notify its Certification Body within 5 business days after being placed in Controlled Shipping – Level 2 (CS II) Status. The Certification Body is not required to issue a non-conformance for an organization placed in CSII status.

For CSII activities that are open during an audit, the organization's Certification Body shall verify that an effective corrective action is in process and, if closed, that the corrective actions have been implemented and read across to the entire organization's site for similar processes and/or products. The organization's Certification Body shall also investigate any CSII activities that have occurred and were closed between surveillance audits.

NOTE: The GM condition of CS II (Controlled Shipping – Level 2) is a performance indicator of problems in an organization's product realization process. The CSII condition should have resolution, or credible resolution and corrective plans in place, which are confirmed by the customer.

9.1.3 Analysis and evaluation

No additional requirements

9.1.3.1 Prioritization

No additional requirements

9.2 Internal audit

9.2.1 AND 9.2.2

No additional requirements

9.2.2.1 Internal audit program

No additional requirements

9.2.2.2 Quality management system audit

The organization shall complete on an annual basis a GM 1927 30 Quality Management System Gap Assessment for each manufacturing DUNS location with a Sourceability Level under 3.

The completed assessments shall be uploaded into the Supplier Certification Management System (SCMS) under the DUNS location the assessment was completed. The identified gaps shall be closed within 60 days from the assessment.

9.2.2.3 Manufacturing process audit

The organization shall incorporate an internal layered process audit process to assess compliance to standardized processes, to identify opportunities for continuous improvement, and to provide coaching opportunities. The layered process audit is led by Management who are competent to conduct the audits. The process shall include:

1. A schedule including frequency of audits and locations of planned audits.
2. Audit layers must be used and include different levels of employees, including top management.
3. Customer complaints or rejections trigger a layered audit on the process that was cause of the issue.
4. All departments within the organization.
5. All findings are recorded and measured for improvement.
6. Findings that cannot be corrected during the audit shall move to an action plan for monitoring to closure.
7. Records of audits shall be maintained.
8. Layered audit questions shall be reviewed periodically and changed if needed to focus on the organization's weaknesses.
9. Layered process audit shall be done as part of corrective action verification activities.

In addition to layered process audits the organization shall audit specific manufacturing processes (see chart below) annually to determine their effectiveness. Applicability and effectiveness of these processes shall be determined utilizing the most current version CQI standard (see chart below). The effectiveness evaluation shall include the organization's self-assessment, actions taken, and that records are maintained. The organization shall upload their annual CQI assessment into the GM Supplier Certification Management System (SCMS) under the DUNS location the assessment was completed.

NOTE 1: The assessment must be performed by a competent auditor. An auditor is competent if they meet the following requirements:

- They shall be a qualified ISO 9001:2015 Lead Auditor, or a qualified internal auditor with evidence of their successful completion of training, and a minimum of five internal ISO/TS 16949:2009 and/or IATF 16949:2016 audits under the supervision of a qualified lead auditor.
- They shall have a minimum of 5 years' experience working with the process that is being audited or a combination of experience and education in the specific process.

NOTE 2: Audit findings must be addressed in an action plan, with champion(s) assigned and reasonable closure dates.

CQI Standards:

Heat Treating Processes	CQI-9 Heat Treat System Assessment
Plating Processes	CQI-11 Plating System Assessment
Coating Processes	CQI-12 Coating System Assessment
Automotive Warranty Management	CQI-14 Automotive Warranty Management Assessment
Welding Process	CQI-15 Weld System Assessment
Plastics Molding Processes	CQI-23 Molding System Assessment
Solder Processes	CQI-17 Soldering System Assessment
Casting Process	CQI-27 Casting System Assessment
Brazing Process	CQI-29 Brazing System Assessment
Rubber Process	CQI-30 Rubber Processing System Assessment
Software Assurance	CQI-34 Software Assurance Approval Process
Wiring Harness	CQI-35 Wiring Harness Quality Guidelines

9.2.2.4 Product audit

The organization shall perform quality focused checks on each shift.

The organization shall have a process for final inspection and/or Customer Acceptance Review & Evaluation (CARE). Early Production Containment (EPC) shall be performed as required during launch and until released by the organization's assigned SQE or designate and per GM 1927 28 Early Production Containment (EPC).

1. Final inspection shall be performed on all finished product prior to shipping. This inspection can be 100% inspection or less based on risk.
2. EPC inspection checks shall be included at an upstream inspection station (final inspection/CARE).
3. Quality checks shall be included in standardized work. Point, touch, listen, and count inspection methods are incorporated.
4. Successive production/quality checks shall be increased in cases of high risks such as model launch, pass through components and characteristics pass through, major changes, shut down (see clause 8.5.1.4) or customer feedback.

9.3 Management review**9.3.1 General**

No additional requirements

9.3.1.1 Management review - supplemental

No additional requirements

9.3.2 Management review inputs

No additional requirements

9.3.2.1 Management review inputs – supplemental

No additional requirements

9.3.3 Management review outputs

No additional requirements

9.3.3.1 Management review outputs – supplemental

No additional requirements

10 Improvement

10.1 General

10.2 Nonconformity and corrective action

No additional requirements

10.2.1 and 10.2.2

No additional requirements

10.2.3 Problem solving

The organization's documented problem-solving process shall include:

1. Tracking of issues through closure.
2. Daily review of issues by a multi-disciplined team including plant management.
3. Daily reviews are documented.
4. All levels of the organization are included in the problem-solving process.
5. Robust method to identify the verifiable root cause(s) of each issue.
6. Timely closure of corrective action(s) including exit criteria.
7. Initial containment is well documented using a containment worksheet or similar.

10.2.4 Error-proofing

Error proofing devices shall be tested to failure or simulated failure at the beginning of each shift at a minimum, otherwise according to the control plan. In the event of error proofing device failure, a reaction plan that includes containment should be included in the control plan.

The organization shall keep a list of all error proofing devices and identify which can be bypassed and which cannot (also see clause 8.5.6.1.1). The bypass determination shall consider safety, severity and overall RPL rating.

10.2.5 Warranty management systems

Automotive Warranty Management (AWM)

Organizations providing production and non-exempt service parts and components to GM shall support improvement in Customer satisfaction through pursuit and achievement of warranty reduction targets established by GM, where applicable. Organizations shall use the latest available edition of the AIAG CQI-14 Automotive Warranty Management to integrate warranty into their quality management system. Evaluation of integration effectiveness shall be based on evidence that the Organization has a process in place that includes elements such as:

- Internal auditors identified.
- An established schedule for self-assessment (including evidence of schedule adherence).
- A defined continuous improvement process (including evidence of goal setting and performance evaluation).
- A defined corrective action process (including evidence of actions taken and verification of effectiveness);
- Organization-controlled record keeping (7.5.3.2.1).
- Progress monitoring (including monthly evaluation of Organization's performance to warranty reduction targets established by GM).
- A Supplier development process (8.4.2.5) identified for applicable Suppliers to the Organization.

Evaluation shall be by self-assessment. The self-assessment shall be conducted annually but may be repeated as needed. The self-assessment may be conducted as part of the Organization's internal quality audit or conducted separately. The self-assessment shall be conducted using the self-assessment spreadsheet tool from CQI-14. The completed spreadsheet shall serve as a record of the self-assessment. Implementation of Automotive Warranty Management shall proceed in three stages:

1. Organization identifies and implements necessary changes to quality management system processes, trains responsible personnel and conducts initial, "baseline" self-assessment.
2. Organization establishes internal performance goals, develops prioritized corrective action plan to achieve these goals and prepares an assessment schedule.

3. Organization monitors performance continues with self-assessments and updates corrective action plan as required to meet GM requirements and internal improvement goals or maintain goal-level performance.

Implementation timing for Organizations (either new Suppliers or current Suppliers to GM) is summarized in the following table:

Organization's relationship to GM	Existing Vehicle Program	New Vehicle Program
New Supplier	Complete implementation through Stage 2 within six months of award of business. Implementation through Stage 3 to follow within one year of start of production.	Complete implementation through Stage 2 before Commercial Launch. Implementation through Stage 3 to follow within six months of Commercial Launch.
Current Supplier	Full implementation through Stage 3 required.	Follow timing for "New Supplier/New Vehicle Program" (above) for new parts or components.

10.2.6 Customer complaints and field failure test analysis

No additional requirements

10.3 Continual improvement

No additional requirements

10.3.1 Continual improvement – supplemental

The organization shall have a process for effective review of PFMEA of all manufacturing parts and processes to occur annually at a minimum. This review shall consider, at a minimum, critical, safety, and high-risk items. The organization shall incorporate tools such as reverse PFMEA or other similar methods to assist in the PFMEA review. PFMEA review output shall include an updated PFMEA, record of the changes made (or record that no changes were made), and identification of the team involved in the review.

Critical, safety, and high-risk items (such as priority from Risk Limiting Method, high RPL or equivalent) shall have an action plan which includes recommended actions, responsibility, and timing.

Reviewing a PFMEA for corrective action process does not meet the requirement of annual review unless there is evidence that critical, safety, and high-risk items are considered in addition to the corrective action issue. A proactive review approach is required.

Publication date	Change effective date	Section	Change
Dec 1, 2016	Jan 1, 2017	All	Release
Sept 6, 2017	Nov 1, 2017	1.1	Changed release date format of ISO 9001:2015
		3.1	Added Accessory Parts definition; added accessory parts to definitions of Organizations and Suppliers
		8.3.3.1	Added requirements
		8.3.3.3	Moved requirements from 8.3.5.2
		8.3.5.2	Added requirements
		8.4.2.3	Added Accessory Parts; added “This clause does not apply to” the beginning of the 2 nd paragraph
		8.4.2.4.1	Changed formatting, added “performing QMS audits” in first paragraph; in 2 nd paragraph the wording was changed to clarify who a qualifying supplier is; added 4 th paragraph
		8.4.2.5	Added accessory parts
		8.5.1.1	Added 2 nd and 3 rd paragraphs
		8.5.1.2	Added 2 nd , 3 rd , and 4 th paragraphs
		8.5.6.1.1	Added requirements for review of risk and
		9.1.1.1	Added requirements
		9.1.2.1	BIQS Certification section: 1 st paragraph - Added withdrawn which is the same as revoked, added expired. Added 3 rd paragraph and the 2 notes.
		9.2.2.3	Added item #9
		9.2.2.4	Added per GM 1927 28
		10.2.3	Item #5 added “including exit criteria”
		10.3.1	Added requirements
May 21, 2019	June 1, 2019	1.2	Added IATF 16949:2016 Deviations (Waivers)
		3.1	Replaced PRR with SPPS
		7.5.3.2.1	Added note on how to purchase
		8.4.2.4.1	Removed probation from #1; 2 nd paragraph Updated, the organization may conduct (2 nd party) audits of their supplier per their supplier development risk management analysis; 3 rd paragraph updated duration statement added *See <i>Automotive Certification Scheme for IATF 16949, Rules for Achieving and Maintaining IATF</i>

			Recognition, section 5.2, Table 5.2 Minimum audit days.
Publication date	Change effective date	Section	Change
		8.4.2.5	Note 1 added MAQMSR
		9.1.2.1	New Business Hold 1 st paragraph added supplier notification requirement to CB; #2 replaced assessment with special audit and timing note for special audit; 2 nd paragraph added maximum days from notice; replaced revoke with withdraw; replaced revocation with withdrawal; deleted NOTE 1 : The permitted suspension period for General Motors Europe (GME) is six (6) months.
			BIQS Requirements Updated Section
			CSII (Controlled Shipping Level 2) Note: replaced special status with performance indicator; Added, the Certification Body is not required to issue a non-conformance.
		9.2.2.3	Added Welding Process CQI 15 Weld System assessment
		10.2.3	Updated #4 All levels of the organization are included in the problem-solving process ; Added new #5 Robust method to identify the verifiable root cause(s) of each issue
		10.2.4	1 st paragraph added in the event of error proofing device failure, a reaction plan that includes containment should be included in the control plan
		8.4.2.3	Updated; corrections were made between May 1 st and May 22 nd ; Clause number typographic error corrected June 4 th
Nov. 05 2020	Nov. 05 2020	9.2.2.4	Replaced GP 12 with Early Production Containment (EPC)
Dec. 01 2020	Dec. 15 2020	9.1.2.1	BIQS Requirements Updated section.
Dec. 22, 2022	Dec. 22 2022	8.3.3.1	Throughout the document: replaced: Risk Priority Number (RPN) with <i>Risk Priority Levels (RPL)</i>
		8.3.4.4	Corrected the referred document name: CG4338 GM 1927 03 Supplier Quality SOR
		9.1.2.1- page 22	Replaced BIQS Requirements with GM Quality Performance Requirements and BIQS Level with Sourceability Level
			Updated wording on GM Quality Performance Requirements (GM QPR) section/paragraph, including the Notes.
			Added a reference link to the Quick Reference Guide web page
			Deleted the word “quality” after NBH
		9.2.2.3	Added Brazing CQI-29 Brazing System Assessment and Rubber CQI-30 Rubber Processing System Assessment

August 15, 2023	August 15, 2023	1.2	IATF 16949:2016 Deviations (Waivers) Replaced the GM 1927 71 Quad Report with GM 1927 70 SQ IATF 16949 Certification Waiver
August 15, 2023	August 30, 2023	9.1.2.1	NBH Updated verbiage
August 15, 2023	August 30, 2023	9.2.2.3	Added CQI-14
August 15, 2023	August 30, 2023	10.2.5	Added Warranty requirements - including AIAG CQI-14 Automotive Warranty Management
January 20, 2025	January 31, 2025	8.5.1.1	Updated Control plan verbiage to align with the current AIAG Control Plan standard. Added volume.
January 20, 2025	January 31, 2025	8.6.2	Updated Layout inspection and functional testing requirements. Included layout inspection to all dimensional requirements on at least 5 parts.
January 20, 2025	January 31, 2025	8.6.3	Added GM Appearance Approval Report
January 20, 2025	January 31, 2025	9.2.2.2	Added Quality management system audit requirements (GM 1927 30 Quality Management System Gap Assessment).
January 20, 2025	January 31, 2025		Added: The completed assessments shall be uploaded into the Supplier Certification Management System (SCMS) under the DUNS location the assessment was completed. The identified gaps shall be closed within 60 days from the assessment.
January 20, 2025	January 31, 2025	9.2.2.3	Updated Manufacturing process audit. Added: The organization shall upload their annual CQI assessment into the GM Supplier Certification Management System (SCMS) under the DUNS the assessment was completed.
			Added CQI-35 Wiring Harness Quality Guidelines
			Added CQI-34 Software Assurance Approval Process
February 12, 2025	March 1, 2025	9.2.2.2	Added clarification: with a Sourceability Level under 3