

GE - AVIATION QUALITY SYSTEM REQUIREMENTS FOR SUPPLIERS

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This specification is in addition to and in no way limiting, superseding, or abrogating any contractual obligation as required by the applicable procurement document.

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A. INTRODUCTION

1. This document establishes the minimum quality system requirements necessary for suppliers, (including supplier participants, revenue share participants, material suppliers, ground support equipment and customer tooling suppliers, distributors and warehouses) who provide material or services to GE-Aviation (herein after referred to as GE-A) and will apply when referenced in the GE-A procurement document.

Suppliers (excluding material suppliers, processors, ground support equipment suppliers, distributors and warehouses) shall meet the applicable requirements of AS/EN/JIS Q 9100/9110 - "Aerospace Basic Quality System Standard" as well as the requirements specified in this document. In case of requirement conflicts, this document will take precedence. Revenue Sharing Participants (RSP) with Design Responsibility shall meet additional applicable requirements as specified in [S-477](#).

Material suppliers, as identified by GE-A, that provide raw material or applied material shall meet the applicable requirements of ISO9001 - "Model for Quality Assurance in Design, Development, Production, Installation, and Servicing" as well as the requirements specified in this document. In case of requirement conflicts, this document will take precedence

Processors, as identified by GE-Aviation, shall meet requirements of AS/EM/JISQ 9100 or AC7004 – “Nadcap Audit Criteria for Inspection and Test Quality System” as well as the requirements specified in this document. Those processors performing only NDE processes may meet this requirement with ISO/IEC 17025 certification. In case of requirement conflicts, this document will take precedence.

Ground support equipment and customer tooling suppliers who provide material or services to GE Aviation, [S-523](#) applies.

Distributors and warehouses (Non-GE-A facilities that acquire material from other suppliers for delivery to the purchaser or other customers) shall meet the applicable requirements of SAE STD AS 7103, Level C/ Level A - "Requirements For Accreditation of Pass Through Distributors" or AS 7104 - "Requirements For Accreditation of Full Distributors" or SAE AS 9120 – “Quality Management Systems - Aerospace Requirements for Stockist Distributors” and/or applicable portions of AS/EN/JISQ 9100- "Aerospace Basic Quality System

Standard" as well as the requirements specified in this document. In case of requirement conflicts, this document will take precedence.

Contractual requirements for the completion of this approval process are listed in [Appendix G](#) of this document.

2. The Supplier will manufacture parts to the drawing revision in effect on the date of the Request for Quotation. When the Supplier incorporates any additional Changes in Design (CID), they will manufacture parts to the drawing revision in place at the date of the Request for Quotation plus those CIDs that have been incorporated.
3. In the event of conflict in GE-A quality system requirements, the order of precedence shall be:
 - 1st Procurement Document or Contractual Agreement (excluding this document)
 - 2nd Applicable Purchaser's drawing
 - 3rd Specifications referenced on the drawing
 - 4th This document
 - 5th All specifications referenced in this document
3. When a GE-A, or GE-A affiliate manufacturing site is used to provide product or processing to fulfill contracts when this document applies, a Certificate of Conformance shall be issued by the GE-A site which attests that work was performed in accordance to GE-A approved Quality Systems procedures and processes. This certificate shall meet all requirements S-1000.
4. The following documents form a part of this document to the extent specified herein.

SOCIETY OF AUTOMOTIVE ENGINEERS AEROSPACE STANDARDS

AS/EN/JISQ 9100/9110 Aerospace Basic Quality System Standard

AS 7103, Level C Requirements for Accreditation of Pass Through Distributors Level C

AS 7104 Requirements for Accreditation of Full Distributors

GE-A SPECIFICATIONS

P1TF17 Source Substantiation Administrative Requirements

P3TF45 CL-A Types of Records to be retained for NDE

[S-400](#) Certified Materials Test Laboratories (CMTL): Metallic Materials

[S-450](#) Certified Materials Test Laboratories (CMTL): Non-Metallic Materials

[S-477](#) Quality Requirements for Revenue Sharing Participants With Design Responsibility

S-526	Pressure Equipment Directive Requirements
S-520	Engine Acceptance Testing
S-525	Assembly and Test Procedure for Engines, Modules, and/or Sub-Assemblies
S-528	Quality Requirements for Forgings
S-1001	Supplier Source Substantiation
S-1002	GE - Aviation Requirements for Supplier Characteristic Accountability & Verification

FEDERAL AVIATION REGULATION

FAR Part 21 Certification Procedures for Products and Parts

B. DESIGN DOCUMENTS

1. Configuration Control

- A. Drawings, specifications and related documents, including referenced specifications and instructions, contained in the Request for Quote or revisions mutually agreed upon by both parties, shall be applicable to the Purchase Order, Electronic Data Interchange or other legal contractual conveyance document.
- B. Class I changes shall be introduced in accordance with the introduction instructions listed in the design change.
- C. Class II changes that contain a directed incorporation date will be introduced as specified in the document. Where an introduction point or date is not specified, the design change is to be incorporated within 18 months of the issue date of the document.
 - 1. Class II incorporation effectivity is the date when the first parts that incorporate the design change will pass through the affected manufacturing processes.
 - 2. For federal, military, or industry specification changes (Class II) utilized in the design, the change incorporation shall be within 18 months of the issue date of the specification change.
- D. Forecasting a planned introduction date: Suppliers shall utilize Inc.CID in the Digital Workbench, to forecast a planned introduction date within 30 days of CID issue date. (60 days for international suppliers).
- E. Extending the introduction point: If incorporation within 18 months is not possible, the incorporation plan shall be submitted to the GE-A Configuration Control Board Chairperson through the GEQR (GE Quality Representative) and recorded on the design change for approval.

- F. In the event that a design change affects a *significant process*, instructions contained in [S-1001](#) and P1TF17 will be utilized to assure proper approval, prior to implementation of such change.
- G. Assure manufacturing and quality plan revisions are accomplished in accordance with the issued CID.
- H. Enter the actual CID incorporation date into the IncCID system.
- I. See Appendix A for handling requests for interpretation of drawings/specifications and approval of drawing/specification options.
- J. The Purchaser's requirements shall be recognized as such only when specified by the Purchaser's purchase order or when stipulated in a special contractual agreement between the supplier and the purchaser.
- K. Supplier designed Components

The supplier shall have a system where:

- 1. All Class I and Class II design changes are submitted to GE-A for change in design issuance (if Class I) or for classification approval (if Class II)
- 2. Design changes rejected are not incorporated into the supplier's drawing and into hardware shipped to GE-A.

All RDC will be kept on file (Accepted and rejected) per administrative record retention requirements

C. CONTROL OF PURCHASES

- 1. For all processing (work) performed by Subtier Suppliers:
 - A. The manufacturer is responsible to assure that all GE-A requirements applicable to the processes, characteristics or material contracted to the Subtier Supplier are specified in the purchasing document.
 - B. The manufacturer is responsible to flow-down any changes in GE-A requirements that affect the processing performed by a Subtier Supplier. This includes ensuring that Subtier suppliers have the latest revision of the necessary Drawings and Specifications including S-1000.
 - C. The purchasing document must define GE-A as the end user for all GE part numbers.
- 2. Purchased Raw Material and Special Processes:
 - A. The supplier's material and special process control system shall assure that:
 - 1. Material and Special Process Test Reports (i.e., material certifications, certificate of tests) are available and maintained on file for all material received. Testing

shall be performed by a certified testing lab for parts requiring Source Substantiation (Ref: [S-1001](#) and PITF17).

2. Material and Special Process Test results reflect all requirements of the drawing and/or specification and conform to drawing and/or specification limits. Documented evidence of this conformity shall include a listing of each material element or test result in the applicable test report. The applicable test report, which shall be signed by a cognizant test laboratory person, shall clearly describe whichever of the following is correct:
 - a. All tests and inspections have been performed and results meet the drawing and/or specification requirements, or
 - b. All tests and inspections have been performed and the results meet all the drawing and/or specification requirements, except _____, which does not meet requirements, or
 - c. All tests and inspections have been performed and the results meet all drawing and/or specification requirements, except test(s) _____, which was not performed per the drawing and/or specification requirements.
3. Material received is the material represented by the Material or Special Process Test Report, and properly identified per drawing and/or specification.
4. Material shall remain identified until its identity is necessarily obliterated by processing.
5. Excess processing material will not be returned to storage until its proper identification has been re-established and restored.
6. Material shipped as the final product meets all purchase order, drawing and/or specification requirements as determined by evaluation of test reports and subsequent processing (when applicable).
7. Personnel responsible for the review of material and special process test reports shall be trained to read, interpret and evaluate test results for the purpose of assuring that all drawing and/or specification requirements of the final product are met.
8. The method employed to evaluate material and special process test report results shall be documented and shall provide for the review of each test as required per the applicable drawing and/or specification. The methodology to be employed shall be subject to Purchaser disapproval.

For wrought products/forgings (closed die, seamless rings, welded rings, open die, etc.), S-specification [S-528](#) applies.

- B. When material or special process services are subcontracted, the supplier shall provide the sub-contractor with a procurement document that reflects the applicable drawing

- and/or specification number and revision, test requirements to be performed, and a request for a certified report of all tests performed. See [Appendix B](#) for recommended procurement flow down requirements.
- C. When the material test report received from the material source has been generated by a certified [S-400](#) (metallic material testing laboratory), or a [S-450](#) (non-metallic material testing laboratory), no initial or subsequent audit testing of purchaser ordered product will be required.
- D. Suppliers shall institute an audit testing plan for material not tested by an [S-400](#), or [S-450](#) certified material testing laboratory to assure data received is representative of the raw material and the material is in conformance with requirements. The plan is subject to Purchaser disapproval and shall include the following minimum requirements:
1. Provisions shall be established for:
 - a. Initial testing requirements to qualify for auditing (qualification shall be by material specification and material source).
 - b. Subsequent auditing requirements.
 - c. Criteria for disqualification to audit and for re-qualification.
 - d. Incorporation of specific acceptance testing requirements when defined through the procurement document.
 2. Audit testing shall be performed by a testing laboratory other than the one used by the material source. Any testing laboratory may be used for non-source substantiated parts.
 - a. When audit tests are performed, for the alloy types listed below, full testing to the specification is not necessarily required. The following guidelines may be used:
 1. Nickel & Cobalt-Elevated and/or room temperature tensile, chemistry and microstructure.
 2. Titanium, Iron & Aluminum-Room temperature tensile, chemistry and microstructure.
 - b. All other raw materials (not listed above) shall be tested to the extent required to verify full compliance with the material specification.
 3. When a material test report received from the material source has not been generated by a S-400/S-450 certified material testing laboratory (for parts which require source substantiation), testing shall be performed on each raw material lot as defined by the applicable specification, by a S-400/S-450 certified materials testing laboratory.

4. Material testing of a Supplier designed component shall be performed by a certified material testing laboratory for any part number that appears on a Source Substantiation List (SSL) and has its applicable material specification included in the "Significant Process Requiring Control" column of the SSL.
5. When raw material is procured from a source other than the raw material manufacturer (i.e., from a distributor, etc.) identification testing is required on each lot of raw material if it is not subject to more complete testing.
 - a. Such material, which still has the original raw material marking (roll stamp, punch stamp, etc.) and is directly traceable to the certified testing laboratory material certificates does not require the identification testing.
 - b. If material identification is lost, the material cannot be used on items that have a traceability requirement (i.e., serial number or lot number) without Purchaser's prior approval. This material may be used on items without traceability requirement if subjected to full specification testing.
 - c. When specifically indicated by the procurement document or when the note "Class B Material Release" is on the drawing, the certificate of test received from the material supplier may, providing all test requirements are met, be the basis for release of raw material in lieu of material audit testing.
6. Purchase Of Source Control Drawing Product
 - a. When the GE-A drawing requires the purchase of a source controlled part, the approved source(s) and cage code(s) identified on the GE-A drawing identifies the approved design source. Source selection shall be limited to the supplier(s) on the GE-A drawing or sources authorized for manufacturing or supply of the identified source control part by the identified design source.
7. GE-A supplied material

When material is supplied directly from GE-A, the supplier shall verify that the material arrived in good condition. No over inspection or certificates are required, however evidence is required that the material was shipped from a GE-A facility, e.g. Shipping Document.

If material is purchased by GE-A and drop-shipped directly from a manufacturer, the supplier is responsible to verify that the shipment has evidence of Full Release.
8. When a GE - Aviation prime supplier utilizes a GE - Aviation process drawing for any part of production, the prime supplier is responsible to assure that all engineering drawing requirements are satisfied.

- E. Parts that do not have the VSE requirement on the drawing, approved special process suppliers are not required to be used. GE-A recommends that suppliers working on non-VSE parts use certified S-400/S-450 laboratory.
- F. Exceptions for testing of some material is listed in [S-1001](#), paragraph V.1.2.1.

Click [here](#) for a process map of Material Certification Requirements

D. QUALITY ASSURANCE PLANNING

1. Sampling of nondestructive testing (NDT) is not permitted when the NDT is performed to fulfill a drawing or specification requirement. This does not apply to in-process NDT used to increase yield.
2. All characteristics on all parts must be accounted for and verified on products and services provided to GE-A. Requirements for characteristic accountability, verification and product acceptance are defined in GE-A Quality Specification [S-1002](#), titled "GE - Aviation Requirements for Supplier Characteristic Accountability & Verification".
3. For support equipment product acceptance, the supplier is required to account for all critical and major drawing characteristics, and drawing notes, for assemblies or parts. Unless required by the purchase order, S1002 is not applicable.

E. TRACEABILITY

1. Traceability Identification

The purpose of requiring serial number or lot number control of items is to assure traceability of certain parts or assemblies to associated records that are generated during processing of raw material, manufacture, assembly, test and ultimate use of these items. This traceability is necessary for the investigation of problems related to the performance or life of an item. Serial number and lot number control is described as follows:

- A. Acceptance records shall be traceable to each other. If serialized or lot numbered parts are manufactured from serialized or lot numbered material, then traceability shall be maintained to those details and their product acceptance records.
- B. Serialized or Lot Numbered Assemblies (Purchaser or Supplier designed):
Each serialized assembly shall be traceable to the product acceptance records that are associated with the overall assembly. The assembly shall also be traceable to each serialized or lot numbered sub-assembly or part and their product acceptance records. If serialized or lot numbered sub-assemblies contain serialized or lot numbered parts, then traceability shall be maintained to those details and their product acceptance records.
- C. Lot numbered items: The lot product acceptance records shall be traceable to the parts/assemblies in the lot.

2. Cross Referencing

Traceability is accomplished by cross-referencing records to individual parts for serial numbered parts or lots (batches) for lot-controlled parts. When serial number or lot control is required, the following cross-reference information shall be included in the records.

- a. Part Identification Number.
- b. Serial Number, if required by drawing, specification or purchase order.
- c. Part Name.
- d. Material Specifications and Revision Designation.
- e. Order Number.
- f. Heat Number or Batch Number.
- g. Heat Treat Number.
- h. Heat Treat Designation.
- i. Casting or forging supplier and serial number when marked on the part.
- j. Raw Material supplier when required by drawing, specification or purchase order.
- k. Manufacturer's identification on finished parts.

3. Serial Numbers

A. Requirements

Each GE-A drawing that specifies the marking of serial number requires that the item be marked in accordance with the marking specification identified in the drawing, with a unique serial number, applied at the drawing level only and be assigned from the supplier block of serial numbers.

NOTE – GE-A serial numbers that were required by a lower level drawing shall not be removed or remarked unless so required by the drawing.

B. GE-A Serial Numbers

When producing items that require the marking of serial number, the supplier shall request, through the Purchaser, an assignment of a three-digit serial number facility identification code. This code will be used to prefix all assigned serial number(s).

1. All serial numbers will contain eight (8) alphanumeric characters.
 - a. The first three characters of the serial number will always contain the unique supplier identification code.
 - b. The supplier is then responsible for the assignment of the remaining five characters of the eight-character serial number.
 - c. The last 5 digits may be alphanumeric except that the five letters, I, O, Q, X and Z shall not be used.

2. Serial numbers shall not be duplicated for any reason; regardless of the part or assembly identification number, design, function or usage (i.e., engine or other product application) of the item being manufactured.
 3. GE-A assigned serial number shall be used only for items that are to be supplied to GE-A or their agent, either directly or through another manufacturer who supplies them directly to GE-A. If product is provided to a customer other than GE-A or their agent, or other source manufacturer, (e.g., after market sales, DOD, etc.) GE-A assigned serial numbers shall not be used.
 4. Serial numbers shall be assigned, using a logical method that is documented in an issued procedure. This procedure is subject to review and approval by the Purchaser. Serial numbers may be subdivided to be used at different facilities or to different product lines.
 5. Once a serial number has been used to identify an item, (i.e., either a unique piece of hardware or an associated paperwork), it shall not be changed at any time or for any reason, even if the items are reworked and re-identified.
 6. Upon notification by GE-A, supplier shall digitally transmit Data for serialized part numbers specified by GE-A. Shipping data will consist of part number, serial number, and date of shipment to GE-A. Data transmittal will be accomplished by a GE-A approved method and occur on the date of shipment.
3. Lot Numbers
- A. Requirements

When a drawing, or a specification referenced on a drawing, requires the application of a lot number, that lot shall be as defined herein.
 - B. Lot Information

Lots shall be formed by grouping items which have the same part number, and which are manufactured under essentially the same conditions, and at essentially the same time. Typical lots would be formed from a single heat, or a single melt or single heat-treat batch.
 - C. Once a specific lot number has been assigned to a lot, that lot number shall not be re-assigned. Applies even if the parts involved are dissimilar in identification, design or function.
 - D. Once a lot number has been used to identify manufacturing or inspection records, it shall not be changed at any time, or for any reason, even if the items are reworked and re-identified.
 - D. Lot numbers shall be limited to a maximum of eight (8) alphanumeric characters. When lot numbers are included as part marking, the five letters, I, O, Q, X and Z shall not be used.

5. Date Code

If the applicable drawing or specification requires the marking of a date code, the code for year and month shall be selected from the table below. When it is required to be more precise than month and year; a third and fourth numeric character representing the day of the month can be added. Thus, the date code, “NE18”, designates January 18, 1990. See [Table 1](#) for Date Codes.

F. RECORDS AND RETENTION - Records shall be maintained in accordance with [Appendix C](#).

G. NONCONFORMING MATERIAL

Nonconformances shall be documented in accordance with [Appendix D](#). In those instances where it is indicated that nonconforming material may have been shipped, the system shall provide for prompt purchaser notification.

H. PREPARATION FOR SHIPMENT

The system shall ensure the material is packaged in accordance with the applicable requirements and is accompanied by the required shipping and technical documents. See [Appendix E](#).

I. SOFTWARE - Software shall be controlled in accordance with [Appendix F](#)

J CONFORMANCE AUDITS

In accordance with AS/EN/JISQ 9100, the supplier must have documented procedures for planning and implementing their internal Quality Audit Program. (See ISO 19011:2002, "Guidelines on quality and/or environmental management systems auditing") Internal, registrar, or customer (other than GE-A) quality system conformance audit findings that have a potential or direct impact on product being produced for delivery to GE-A will be promptly reported to the purchaser.

K. PRIORITY PARTS REVIEW - Suppliers will participate in the Priority Parts Review when requested by GE-A.

L. SUPPLIER ORIENTATION & QUALITY PLANNING CLASSES

1. The Quality Manager at a new GE-A supplier or a new Quality Manager at an approved GE-A Supplier, shall attend a Supplier Orientation Class except as noted below in table “Supplier Quality Orientation Class”.

The class should be completed within 6 months of Supplier approval, or in the case of a new Manager, within 6 months of being on the job

Supplier Quality Orientation Class

Supplier	Class requirements
Suppliers with Supplier Codes Starting with J	At GEQR request
Suppliers that produce tooling only, no aircraft engine hardware produced.	At GEQR request
Suppliers with Supplier Codes Starting with T	At GEQR request
All other suppliers	Required to attend unless otherwise exempted by COE Quality Leader

2. Prime supplier personnel who participate in Manufacturing Planning or Quality Planning (per S-1002) shall participate in GE provided Web based training. Prime supplier source profiles shall include at least one ‘Manufacturing Planner’ and at least one ‘Quality Planner’.

M. DISTRIBUTOR AND WAREHOUSE CONTROLS

1. Distributors and Warehouses shall assure traceability and flow down of requirements on all purchased products to the source of manufacture and their related acceptance documents. The actual source of all material shall be identified. Material from different manufacturing sources shall be stored in a manner that the material does not become intermixed and that the manufacturing source identity and material identity is maintained.
2. Distributors and Warehouses shall not modify, rework, or repair material in-house or by subcontracting unless approval is obtained from the Purchaser or the work is performed by the actual manufacturing source of the material.
3. Distributors and Warehouses may employ Sampling plans in accordance with requirements that are specified in SAE STD AS 7103 or SAE STD AS 7104 provided their use assures fulfillment of Purchaser's requirements. Acceptance sampling of critical characteristics is not acceptable under any circumstances; however, demonstration of process control through the use of SPC and an assurance of a capability index (Cpk) greater or equal to 1.33 is an acceptable means of verifying conformance of critical characteristics.
 - A. All attribute lot-by-lot sampling plans must conform to zero acceptance number (C=0 - the number of rejects allowed in an acceptable lot).
 - B. When non-conforming characteristics are found in the lot sample, the sampled lot will require 100 percent inspection of the nonconforming characteristic(s) in the lot. Results of the 100 percent inspection shall require the nonconformance to be submitted through the eNMS System or the return of the hardware to the manufacturer.
 - C. The following shall be used in selecting the correct acceptance plan to be used to assure the acceptance of product that meet the established Acceptable Quality Level:

Classification of Characteristics	Drawing Symbol	Accept Quality Levels	Number
Critical	⊕	0 %	0
Major	⊖	.65 %	0
Minor	No Symbol	4 %	0
Unclassified	No Symbol		

NOTE: The classification of the characteristics is a means of communication by Design Engineering of the relative functional importance on product performance (i.e., usability, durability, reliability, life, etc.) if the characteristic is beyond drawing limits

4. [S-411](#) shall apply when a designated distributor procures hardware that is source controlled.

N. Class Y Hardware

New Class Y hardware is the full equivalent of production hardware and may be used as such in all applications.

O. PMA (Parts Manufacturer Approval) Parts

Parts ordered under a GE Purchase Order for delivery to a GE production facility shall not be marked “FAA-PMA”.

P. Partial and Full Release

A Partial Release shall be used whenever all the requirements have not been met (i.e. First Article not signed off, VSE not signed off, Nonconformance Document not closed), etc. Partial release authorization is required by the GEQR prior to release of hardware.

A Full Release shall be used when all requirements have been met.

Q. Prime Supplier Responsibility

1. In addition to complying with all requirements listed in this document, prime suppliers are required to flow down applicable portions of this document that are imposed by GE-A purchase order to sub-tier sources.
2. Upon a move to a new facility or equipment move, contact the GEQR to determine if there is a need for re-audit, re-qualification of equipment, etc.
3. The following is required for documents sent to GE-A.
 1. Document Completion – Unless specifically directed otherwise by the documentation requiring the completion of a form or log, all blocks, lines, spaces identifying information to be entered require completion (i.e. entry of some form).
 1. Manual forms - Acceptable entries include

- a. Specific data/information as specifically required
- b. N/A (indicating not applicable)
- c. N/R (indicating not required)

Note: If specific restrictions exist relative to acceptable entries, they shall be clearly defined in the documentation requiring form completion.

2. Manual logs – Unless specified on the log (i.e. instructions for completion) all lines require individual entries. The use of “ditto” marks, lines drawn through specific entry fields, etc. are not recognized as acceptable logging of information. Unless otherwise prohibited, entries as identified as acceptable in Manual forms (above) apply.
3. Electronic/on-line form completion – The requirement for entry into any particular field will be identified and controlled by the specific electronic application.
 - a. If a specific entry format is required, the application will assure proper entry.
 - b. If the entry format is not specified, entries as identified as acceptable in Manual forms, specific data/information apply.

R. Unusual Visual Conditions

1. An unusual visual condition can exist when a GE-A product contains a technically acceptable visual condition, which could result in unfavorable reaction or questions when seen by a customer.
2. Examples include, but are not limited to the following:
 - a. discoloration
 - b. uneven surface condition
 - c. evidence of rework/repair
 - d. result of process change which alters the appearance of the part from parts shipped prior to the process change)
3. If the visual condition violates an engineering requirement or is a result of a repair, see [Appendix D](#) for documentation instructions.
4. If the visual condition does not violate engineering requirements, but is considered “Unusual Visual Condition”, the manufacturing source must contact the responsible GEQR listed in the Source Profile, who will work with the Customer Program Quality Leader for concurrence prior to the part being shipped.

- a. For commercial engine hardware – manufacture can select UVC-Unusual Visual Condition from the SCWC under the header Quality/Nonconformance/UVC and submit their UVC directly to the CPQL.

Link can be located by clicking on the following: [UVC Request Form](#)

S. Assembly and Test

1. [S-525](#) applies when a supplier is doing assembly on modules, components or engine assemblies. Purchase orders will include a SIN (Significant Item Number) vs. part number. SINS are identified as being five (5) characters in length and are the first five (5) characters of the part position number (PPN).
2. [S-520](#) applies when a supplier is providing engine testing for Marine & Industrial and Military engines only.

T. Pressure Equipment Directive Requirement

1. When European Union ‘Pressure Equipment Directive’ (PED) is required on the drawing, Sourcing Specification [S-526](#), ‘Pressure Equipment Directive Requirements’, is invoked. The following aspects may differ from requirements normally used on GE-A hardware:
 - a) PED Qualified raw material sources and testing labs
 - b) Certified Welder training and documentation
 - c) Record retention schedules
 - d) Part Marking

U. DEFINITIONS:

ACCEPT - A disposition provided by the purchaser when it is determined that the nonconforming product meets the definition of a minor nonconformance in its existing condition without any special handling, tooling, or procedures.

ATTRIBUTE – Measurement of a characteristic or property to determine whether or not it conforms to a given requirement (PASS or FAIL, GO, NO/GO, ACCEPT/REJECT - etc.)

CERTIFIED - The initial and periodic qualifications of suppliers who have been subjected to an on-site evaluation of special process facilities, procedures, personnel and controls and have satisfactorily demonstrated their ability to meet the applicable specification requirements.

CERTIFIED/APPROVED - GE - Aviation has certified to perform a particular Special Processes and is listed in the ‘Yellow Pages’ on the Aviation Supply Chain Web Center.

CHARACTERISTIC- Dimensional, visual, functional, electrical, chemical, mechanical and material features or properties which describe and constitute the design of the item and can be measured, observed and identified to determine conformance to the requirements.

COMMERCIALY AVAILABLE SOFTWARE - Deliverable or non-deliverable software that has been developed for general use and is supplied in an "off the shelf" manner.

CORRECTIVE ACTION – The action taken to eliminate the cause of a noncompliance or nonconformance in order to prevent recurrence. The corrective action may be:

1. Containment – Short term actions taken to:
 - a. Prevent escapes of nonconforming hardware (for example: through nonconformance document and purges).
 - b. Address the immediate cause of the nonconformance or noncompliance (For example: replace the bad tools/gage, correct documentation, etc.)
2. Fix – long term action taken to prevent or reduce the likelihood of recurrence by addressing the root

cause of nonconformance or noncompliance (for example: through process and/or procedural change, error-proofing)

CRITICAL CHARACTERISTIC – A characteristic of an item which, if nonconforming, may result in a hazardous or unsafe condition for personnel using, maintaining or depending on the unit-of- product; or which may prevent or seriously affect the satisfactory operation or functioning of the unit-of-product.

DEVIATION - A specific written authorization, granted prior to the manufacture of an item, to temporarily depart from a particular performance or design requirement of a specification, drawing or other document for a specific number of units or a specific period of time. A deviation differs from an engineering change in that an approved engineering change requires corresponding revision of the documentation defining the item, whereas a deviation does not normally contemplate revision of the applicable specification or drawing.

Note: Prior to the manufacture of an item means prior to the implementation of all planned process related elements necessary to produce the item. These elements may include but are not limited to material, tools, dies, molds, processes and procedures, etc.

DISTRIBUTOR - A supplier that acquires material and parts from other suppliers for delivery to GE-A or other customers.

ELECTRONIC DATA INTERCHANGE (EDI) - The electronic transfer of Purchase Order or certification data between GE-A and their suppliers.

EMCP/LCP Parts – Parts with either a “Life Controlled Part” or an “Enhanced Manufacturing Control Part CL-A (or CL-B)” note on the drawing.

GE QUALITY REPRESENTATIVE (GEQR) - A GE employee or authorized representative with the authority to represent GE Sourcing Quality or Charter Source Quality (Farmout).

GROUND SUPPORT EQUIPMENT SUPPLIER - A supplier that only supplies tooling, test equipment, process equipment, and repair tools required for the development, production and maintenance of GE aircraft engines.

HARD PARTICLE - Abrasive materials such as aluminum oxide, silicon carbide and other oxides, carbides and nitrides. Hard particles will be pushed down into the filter membrane or be expelled out from under a pointed steel probe tip when pressure is applied, and normally remain intact in either case. Most hard particles are translucent or transparent.

IDENTIFICATION TESTING - Those raw material acceptance tests necessary to qualitatively assure correct material and correct condition.

IN-PROCESS CHARACTERISTIC - An intermediate characteristic that does meet or will meet the engineering requirement prior to final delivery or use. Examples are machining stock, intermediate welds, engineering characteristics held to reduced tolerances and characteristics that will meet engineering requirements as a result of further processing.

LIBRARY CONTROL - The collection and control of software and related documentation designed to aid in software development, use or maintenance.

Life of Die - Time period during which a die/tool/mold or combination thereof, that are used to produce a component, remains unchanged. A change is defined as modification of an existing die/tool/mold, procurement of a new die/tool/mold (even if it is the same nominal design), or use of a combination of dies/tools/molds that has not previously been used

Life of Die (LoD) Waiver - A written authorization to accept material or items which are found to depart from specified requirements, but nevertheless are considered suitable for use "as is". This specific authorization applies to items that are generated from a specific die/tool/mold or combination thereof and that cannot be changed without modification to the die/tool/mold or combination.

Note: Life of Die Waivers can only be used on commercial hardware.

LOT NUMBER - A unique identifier used to control and identify a definite number of items that have been produced by the same manufacturing cycle and usually submitted for acceptance at one time or place (i.e. acceptance lot). Typically lot numbers are heat lot number, heat treat lot number, and melt lot number, which are usually associated with raw material, castings, or forgings

MAJOR CHARACTERISTIC - A drawing or specification feature, which if nonconforming, may

result in operational or functional failure of the item, or may materially reduce the usability, physical or functional interchangeability or durability of the GE-A end product for its intended purpose. Identified on GE-A drawings and specifications with symbol y.

MANUFACTURER - A supplier that makes parts complete, or assembles parts into a sub-assembly (including suppliers of castings and forgings).

MATERIAL - Raw material, parts, or assemblies.

MATERIALS SUPPLIER - A supplier that only supplies materials used in the manufacture of components (This includes suppliers of weld wire, braze and thermal powders, chemicals, dry film lube, paint, plating materials, bar stock, sheet metal, non-metallic/composite material, melters and converters, and the like.)

MINOR CHARACTERISTIC (No Symbol) - A drawing or specification feature, which if non-conforming, does not materially reduce the usability, physical or functional interchangeability or durability of the product, or are departures from established standards having no significant bearing on the effective use or Operation of the product.

MINOR NONCONFORMANCE - A nonconformance that shall not affect the usability of a GE Aviation product or material for its intended purpose. Minor nonconformances do not adversely affect health or safety; performance; interchangeability, reliability or maintainability; effective use or operation; weight or appearance (when a factor).

MRB - Material Review Board. A board consisting of a chairperson and an Engineering representative responsible for reviewing, evaluating, and determining or recommending disposition of nonconforming GE Aviation product referred to it.

NONCONFORMANCE - A failure of a characteristic to conform to the requirements specified in the contract, drawings, specifications, or other approved GE-A product description. The failure to perform all material tests and inspections required by the approved GE-A product description and/or the failure to perform tests and inspections required in the approved product description.

NONCONFORMANCE DOCUMENTATION - A record of a nonconformance either documented on a form or entered into a computerized system, which is

capable of containing all pertinent information associated with the nonconformance.

NONCONFORMANCE MANAGEMENT SYSTEM (eNMS) - The electronic system for online disposition of supplier nonconformances. This system includes electronic review, disposition, trending measurement, corrective action request, traceability and record retention.

NONCONFORMING MATERIAL - Any GE Aviation product containing one or more nonconformances

NONCONFORMANCE DOCUMENT LOT IDENTIFICATION CARD (NDLIC) - A document used by the purchaser to record the reason for the open nonconformance document and to authorize shipment to purchaser prior to final disposition

OPEN NONCONFORMANCE DOCUMENT - A nonconformance document is considered "Open" when material and/or additional documentation is required to be sent to the purchaser for review prior to final disposition.

PRELIMINARY REVIEW (PR) - An initial evaluation of a nonconformance (or a departure to an in-process characteristic) to determine the appropriate disposition.

PRIME SUPPLIER - Prime Supplier is a supplier with a 5-digit supplier code that does NOT begin with 'T' and is on a Purchase Order.

PRIORITY PARTS - A high energy rotating part, a high-pressure casing, or a single-element mount structure in an approved GE-A engine design, that if it were to fail, could have a major impact on the airworthiness of aircraft in service from the viewpoint of potential non-containment, engine structural problems, or mount integrity events. Generic parts in this category include: engine rotor (for example; fan, booster, high-pressure compressor, high-pressure turbine, low-pressure turbine) disks, blisks, impellers, spools, cooling plates, spacers, thermal shields, and pressurized casings (i.e., casings subject to compressor discharge pressure, combustor and high-pressure turbine flow path pressure), and engine mount system hardware that contain single-element structural members (i.e., non-redundant structural mount systems).

PROCESSOR - A supplier that performs operations, or processes, on hardware owned by other companies (including special processes and machining), but does not make any parts complete for GE-A.

PURCHASER - The procuring activity of GE Aircraft Engines that issued the procurement document invoking this document. When this document is invoked by a U.S. Government purchasing activity (or such activity's designee), the purchaser shall mean such activity or designee as the case may be.

PURCHASE ORDER - (PO) - The formal legal contract between GE-A and a supplier covering the purchase of materials and services. PO's are typically hard copies with approval signatures, but some PO's are transmitted electronically (EDI) or may take the form of a legal contractual conveyance document.

RAW MATERIAL - Metallic or non-metallic material in its basic form (i.e., sheet, bar, wire, powder, etc.), including castings and forgings used to fabricate GE-A products, and which remains present in whole, or in part, in the finished product.

REPAIR - A procedure which may be applied to GE Aviation product with one or more nonconformances when it has been determined that the product does not meet the definition of a minor nonconformance in its existing condition without any special handling, tooling or procedures. The purpose of the repair is to bring nonconforming product into an acceptable condition.

Note: Repair is distinguished from rework in that the item after repair does not completely conform to the applicable engineering requirements.

REVENUE SHARE PARTICIPANT - GE-A selected sources that have an agreement with GE-A for the purpose of sharing both the development costs of the new engines and the revenue derived from the sale of those engines. GE-A maintains overall design responsibility for customer end use product, but may delegate detail part design to the RSP.

REWORK - A procedure applied to a nonconformance that will completely eliminate it and result in a characteristic that conforms completely to engineering requirements (i.e., drawings, specifications, etc.).

SCRAP - Nonconforming material that is not usable for its intended purpose and cannot be economically reworked or repaired.

SERVICES - Processing operations performed on material (i.e., inspection, heat treat, joining, plating, forming, machining, etc.).

SIGNIFICANT PROCESS - A process or process sequence that if changed could affect design intent;

might affect material structure, mechanical, chemical or electrical properties; and cannot normally be evaluated without destructive testing. Applies to parts/assemblies that require source substantiation only.

SOFTWARE - Computer programs, associated internal data, and related documentation.

SOFTWARE CONFIGURATION MANAGEMENT - The process of identifying and defining the functional and physical characteristics of software items, controlling the release and change of these items throughout the life cycle, recording and reporting the status of these items and change requests, and verifying the completeness and correctness of the items.

SOFTWARE QUALITY ASSURANCE - A planned and systematic pattern of all actions necessary to provide adequate confidence that software conforms to established requirements and standards, and that it achieves satisfactory performance over the entire life cycle.

SOURCE SUBSTANTIATION (SS) - The verification and approval of a source and/or alternate source/process to manufacture parts and assemblies equivalent to parts originally qualified (as defined by the source substantiation requirements, engineering drawings and applicable specifications).

SPECIAL PROCESSES - Those processes which modify or change the inherent physical, chemical, electrical or metallurgical properties of an item, or non-conventional methods which remove or deposit material on an item during or after fabrication which cannot be fully evaluated by nondestructive means, or those used to maintain process control such as nondestructive testing. These processes may require a demonstration of operator or equipment capability or proficiency and require special controls for monitoring per specification. Means for compliance are contained in individual specifications. Typical processes are listed in GE-A approved "Yellow Pages".

STANDARD REPAIR PROCEDURE - A repair demonstrated to be technically adequate and cost effective which may be applied to a nonconforming GE-A product under defined conditions. Defined conditions

shall include an expiration date or a finite limit on the number of application, or both.

SUB-TIER SUPPLIER – Any supplier performing operations, processes or providing raw material for a manufacturer.

SUPPLIER - Sources (including distributors, warehouses, revenue share participants and supplier participants) other than GE-A, who supply material, parts, processes, or services for incorporation into GE-A products.

S-SPECIFICATION - A documented procedure, issued by Sourcing Quality to a supplier (via a purchase order or other contractual binding document), to provide clarification, or edification of quality controls that will be needed to satisfy existing GE-A Engineering requirements. Identification of the specification will be prefixed by an S-, which will be followed by alphanumeric characters.

UNCLASSIFIED CHARACTERISTIC – Feature of a part that has not been considered for classification as critical, major, minor. Examples of unclassified characteristics/features are:

- Drawing note referencing a specification
- Identification marking
- Manufacturing processes (results may be classified)
- NDE inspection processes or their output
- Physical properties (e.g., round, hexagon)
- Foreign material
- Missing parts or visual (e.g., corrosion, damage)

Note: Since neither minor nor unclassified characteristics are identified with a symbol, it is impossible to distinguish between them by looking at a drawing.

WAIVER - A written authorization to accept a configuration item or other designated items, which during production or after having been submitted for inspection, are found to depart from specified requirements, but nevertheless is considered suitable for use "as is" or after repair by an approved method.

APPENDIX A

SOURCE PROBLEM REPORT PROCESS

A. 1. Scope

This appendix describes the method of applying for the following types of Source Problem Reports (SPR).

- a. Request for Interpretation of a Drawing
- b. Request for Interpretation of a Specification
- c. Approval of Specification Options
- d. Producibility requests
- e. GE Drawing errors

A. 2. Requirements

The electronic SPR system on the SCWC will be used when:

- a. Disagreement exists or clarification is needed for a GE drawing or GE/Industry specification requirement
- b. Purchaser approval is required for an option provided for in a GE or Industry specification
- c. A GE drawing or GE specification change is needed to improve the manufacturability of a product
- d. A correction to a GE drawing or GE specification delineation is required

A. 3. Procedure

- a. The source will complete the Problem Definition section of the SPR and submit the electronic record.
- b. A completed response with the appropriate GE signatures will become part of the source quality records

Note: The SPR process is not a substitute for drawing, specification, or significant operation changes controlled by other requirements.

APPENDIX B

MATERIAL AND SPECIAL PROCESS TEST REPORTS – RECOMMENDED FLOWDOWN REQUIREMENTS

B. 1. Scope

This appendix provides a listing of recommended procurement flow down requirements to be used by a supplier when purchasing raw material(s) or special process(s) from a sub-tier. The following are designed to assure that adequate information is contained in test reports for raw material or special process shipments that are received from sub-tiers for end product that is to be shipped to GE-A:

B. 2. General Information

- Purchase order number
- Job number
- Quantity of parts
- GE-A specification number and issue number and/or drawing number, revision letter and drawing note number.
- Heat lot number
- Part number
- Serial numbers (applicable to serialized parts only)
- Billet locations for each forging
- Forging lot number (applicable to forged parts only)
- Heat treat lot number
- Specific heat treat cycle used
- As shipped condition of material (e.g. solution treated; solution and aged)
- Test specimen machining source (GE-A code, name and address for source substantiated material)
- Test specimen testing source (GE-A code, name and address for source substantiated material)
- Inspection source (GE-A code, name and address for source substantiated material) - Pages shall be identified “Page __ of __”

B. 3. Data/Test Results Information

- Clear identification that each test result conforms to specification or drawing requirements
- Clear identification of any test or inspection required by specification or drawing but not performed
- Numerical results for all chemical tests (including tramp/trace elements) required by specification or drawing
- Numerical results for all mechanical tests required by specification or drawing

- Results of other tests required by specification or drawing (e.g. beta transus, grain flow direction)
- All results shall be stated in the required units of measure (e.g. English vs. Metric, Rockwell vs. Brinell)
- All results shall use the same terminology as in the specification or drawing (e.g. Ni3cb vs. Delta Phase)
- Conversions shall be noted (e.g. hardness conversions)
- Test conditions shall be noted (e.g. temperature, stress rupture load, method of determining beta transus)
- When numerical tests are not applicable, a certificate of conformance shall be provided
- For drawing and/or specification requirements (test or inspections), which are “capability tests”, a statement of capability shall be included.

APPENDIX C

RECORDS

C. 1. Scope

This appendix establishes requirements for identifying and maintaining quality related records.

C. 2. Requirements

A. General

1. These requirements apply to records of the types listed below which are generated in the manufacture of the item. These requirements also apply to all other records that are generated in compliance with the purchase order, the drawing and related documents.
2. Records are to be documented in a manner or medium that if altered it would be obvious that changes were made. Permanent ink shall be used, preferably blue or black. Changes to records shall be made by lining out the old data, entering the correct data, then initialed (or signed) and dated by authorized personnel. No erasures or “white-out” allowed.

B. Types of Records

1. Product Acceptance Records that provide the objective evidence of hardware acceptance are as follows:
 - a. Certificates of test and other laboratory results that are required to establish product acceptance.
 - b. Inspection and test results
 - c. Manufacturing, assembly and inspection operation sheets.
 - d. Records of the completion of manufacturing, assembly and inspection operations.
 - e. Inspection and statistical acceptance procedures.
 - f. Nondestructive Testing (NDT) records that provide values or results for product acceptance. (All radiographic film is covered under table in Appendix C [Para. C.2.C.2.b](#))
 - g. Material Review Board (MRB) disposition documents and repair procedures.
 - h. Requests for Interpretation of Drawing/Specification option, See [Appendix A](#).
 - i. Source Substantiation records which reflect GE-A approval status of the part number and any subsequent significant operation changes that have been incorporated into the part processing parameters.
2. Serial and Lot Number Assignment
Records of the assignment of individual serial numbers and lot numbers, identification number of the part or assembly, and the date of assignment. These records are only required when serial numbers and/or lot numbers are a drawing requirement.
3. Administrative Records associated with the administrative control of the quality system, are as follows:

- a. System, process and hardware audit results (including audit laboratory tests and metallographic mounts)
 - b. Corrective action
 - c. Certification and processes and personnel
 - d. Tool, gage and instrument control records
 - e. NDT maintenance records
 - f. MRB administration
 - g. Employee inspection and process stamp assignment records
 - h. RDC – Request for Design Change
- C. Availability
- 1. General
 - a. Records shall be readily available for on-site Purchaser, GE-A customer and/or Regulatory Agency review (within one [1] day). If the Purchaser requests records to be furnished for review, these records shall be made available for delivery within three working days of notification by the Purchaser.
 - b. Maintenance and storage of records will be such that when requested for review, they are legible, and interpretable. If records are documented on a medium that can deteriorate over time or can become irretrievable due to obsolescence of an electronic systems (i.e. faxed copies, strip charts on thermal paper, electronic records, etc.), it will be the responsibility of the supplier to assure that there is technology available to recreate the records so that they are maintained in an environment that will eliminate deterioration and/or provide for timely retrievability.
 - 2. Retention Period
 - a. The requirements of para. [C.2.C.1](#) above shall continue in effect for the time periods specified below from the date that the document was generated:
 - i. Engine Assembly Operations Sheets, Operation Sheet revisions, History Logs and Quality Plans for production engines. – Fifteen (15) years.
 - ii. Manufacturing Operation Sheets for Component – Manufactured Items – To be retained per the duration requirements specified in the table below for Product Acceptance records and Serial/Lot Number Assignment records.
 - b. Data stored in GE Aviation electronic systems is considered compliant to retention requirements.
 - c. The requirements of Para. [C.2.C.1](#) above shall continue in effect for the time period specified below from the date that the document was generated. The table below represents the record retention requirements:

Administrative Records	Two (2) Years
Radiographic Film	Five (5) Years

NDE Inspection Records	Per P3TF45 CL-A and in accordance with retention period below
Parts identified as meeting the European Union Pressure Equipment Directive 97/23/EC	The longer of ten (10) Years or any applicable period identified below
Non-Serialized Parts	Two (2) Years
Fan, Compressor & Turbine Blades	Ten (10) Years
Pumps, gearboxes & valves	Ten (10) Years
Main engine bearings	Twenty Five (25) Years
Serialized static parts such as Frames, Casings, Pressure Vessels, Engine Mounts, Main Fuel Controls & Heat Exchangers	Twenty Five (25) Years
Serialized rotating parts such as Discs, Spools, Seals & Torque Rings	Permanently
Production Engine Build-Up, Configuration and Test Acceptance records	Fifteen (15) years

3. Delivery of Data

The delivery of data to the Purchaser does not release the supplier from any requirements herein with respect to that data except as agreed to in writing by the Purchaser.

4. Termination

- a. A supplier who ceases operations (i.e., goes out of business) shall contact the Purchaser to make arrangements for the transfer of all quality records to the Evendale/Lynn Records Center for storage.
- b. A supplier who discontinues acceptance of GE-A purchase orders, but whose business remains intact, shall be responsible for the archival of all quality-related records for the time periods specified in the record retention table above.

5. Records

- a. Serial Number Assignment – The system for assigning serial numbers shall provide the following information:
 - i. Purchaser’s part or assembly identification numbers
 - ii. Date of assignment
 - iii. Explanation for deviations from expected sequence or practice
 - iv. Record of serial numbers assigned to rejected items

D. Microfilming

- 1. Microfilming of records shall comply with the following controls:

- a. All microfiche/microfilm shall be stored in a fireproof container, or equivalent method, such as redundant storage at an independent storehouse facility, etc.
 - b. A system shall guarantee the film accurately reproduces the original document and assures legible retrievability throughout the duration of the retention period.
 - c. A referencing system shall indicate what documents are stored
 - d. A system shall provide for retrieval and reproduction of the data and control of log in/log out of the film.
- E. Computer Generated Records (Including Laser Storage)
1. Information Resources Physical Security Requirements: Computer centers that retain Quality related records must establish the responsibilities and requirements for the physical security necessary to provide adequate protection for information resource.
 2. Control of computer Systems Access and Data Access Requirements: Computer centers that retain Quality related records must establish the responsibilities and requirements for computer system access and computer data access.
 3. Disaster Recovery Planning Requirements: Computer centers that retain Quality related records must establish a Disaster Recovery Planning Program or a similar sub-tier document.

Table 1 – Date Code

	PRIOR													
YEAR	YEARS		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2007	1965	1923	AA	BA	CA	DA	EA	FA	GA	HA	JA	KA	LA	MA
2008	1966	1924	AB	BB	CB	DB	EB	FB	GB	HB	JB	KB	LB	MB
2009	1967	1925	AC	BC	CC	DC	EC	FC	GC	HC	JC	KC	LC	MC
2010	1968	1926	AD	BD	CD	DD	ED	FD	GD	HD	JD	KD	LD	MD
2011	1969	1927	AE	BE	CE	DE	EE	FE	GE	HE	JE	KE	LE	ME
2012	1970	1928	AF	BF	CF	DF	EF	FF	GF	HF	JF	KF	LF	MF
2013	1971	1929	AG	BG	CG	DG	EG	FG	GG	HG	JG	KG	LG	MG
2014	1972	1930	AH	BH	CH	DH	EH	FH	GH	HH	JH	KH	LH	MH
2015	1973	1931	AJ	BJ	CJ	DJ	EJ	FJ	GJ	HJ	JJ	KJ	LJ	MJ
2016	1974	1932	AK	BK	CK	DK	EK	FK	GK	HK	JK	KK	LK	MK
2017	1975	1933	AL	BL	CL	DL	EL	FL	GL	HL	JL	KL	LL	ML
2018	1976	1934	AM	BM	CM	DM	EM	FM	GM	HM	JM	KM	LM	MM
2019	1977	1935	AN	BN	CN	DN	EN	FN	GN	HN	JN	KN	LN	MN
2020	1978	1936	AP	BP	CP	DP	EP	FP	GP	HP	JP	KP	LP	MP
2021	1979	1937	AR	BR	CR	DR	ER	FR	GR	HR	JR	KR	LR	MR
2022	1980	1938	AS	BS	CS	DS	ES	FS	GS	HS	JS	KS	LS	MS
2023	1981	1939	AT	BT	CT	DT	ET	FT	GT	HT	JT	KT	LT	MT
2024	1982	1940	AU	BU	CU	DU	EU	FU	GU	HU	JU	KU	LU	MU
2025	1983	1941	AW	BW	CW	DW	EW	FW	GW	HW	JW	KW	LW	MW
2026	1984	1942	AX	BX	CX	DX	EX	FX	GX	HX	JX	KX	LX	MX
2027	1985	1943	AY	BY	CY	DY	EY	FY	GY	HY	JY	KY	LY	MY
2028	1986	1944	NA	OA	PA	RA	SA	TA	UA	VA	WA	XA	YA	ZA
2029	1987	1945	NB	OB	PB	RB	SB	TB	UB	VB	WB	XB	YB	ZB
2030	1988	1946	NC	OC	PC	RC	SC	TC	UC	VC	WC	XC	YC	ZC
2031	1989	1947	ND	OD	PD	RD	SD	TD	UD	VD	WD	XD	YD	ZD
2032	1990	1948	NE	OE	PE	RE	SE	TE	UE	VE	WE	XE	YE	ZE
2033	1991	1949	NF	OF	PF	RF	SF	TF	UF	VF	WF	XF	YF	ZF
2034	1992	1950	NG	OG	PG	RG	SG	TG	UG	VG	WG	XG	YG	ZG
2035	1993	1951	NH	OH	PH	RH	SH	TH	UH	VH	WH	XH	YH	ZH
2036	1994	1952	NJ	OJ	PJ	RJ	SJ	TJ	UJ	VJ	WJ	XJ	YJ	ZJ
2037	1995	1953	NK	OK	PK	RK	SK	TK	UK	VK	WK	XK	YK	ZK
2038	1996	1954	NL	OL	PL	RL	SL	TL	UL	VL	WL	XL	YL	ZL
2039	1997	1955	NM	OM	PM	RM	SM	TM	UM	VM	WM	XM	YM	ZM
2040	1998	1956	NN	ON	PN	RN	SN	TN	UN	VN	WN	XN	YN	ZN
2041	1999	1957	NP	OP	PP	RP	SP	TP	UP	VP	WP	XP	YP	ZP
2042	2000	1958	NR	OR	PR	RR	SR	TR	UR	VR	WR	XR	YR	ZR
2043	2001	1959	NS	OS	PS	RS	SS	TS	US	VS	WS	XS	YS	ZS
2044	2002	1960	NT	OT	PT	RT	ST	TT	UT	VT	WT	XT	YT	ZT
2045	2003	1961	NV	OV	PV	RV	SV	TV	UV	VV	WV	XV	YV	ZV
2046	2004	1962	NW	OW	PW	RW	SW	TW	UW	VW	WW	XW	YW	ZW
2047	2005	1963	NX	OX	PX	RX	SX	TX	UX	VX	WX	XX	YX	ZX
2048	2006	1964	NY	OY	PY	RY	SY	TY	UY	VY	WY	XY	YY	ZY

APPENDIX D

SUPPLIER NONCONFORMING MATERIAL: REVIEW AND DISPOSITION

D. I. SCOPE

- A. This appendix establishes requirements for identification, documentation, evaluation of corrective action, control, disposition and repair of nonconforming material.

D. II. NONCONFORMANCE DOCUMENTATION

- A. Initial Documentation - When any departure to requirements (i.e., nonconformance or departure to an in-process characteristic) is initially identified, it must be documented. Documentation may be via an electronic system or may be included as part of a shop router, traveler or Dispatch Order, a receiving report, a build-up record, a test fault sheet or similar documentation. Nonconformance records are an element of the historical records traceable to the product.
- B. Transferring to Other Documentation - When necessary, a nonconformance (or departure to an in process characteristic) may be transferred from one document to another by entering all pertinent information from the original document to the new document. The original document must be traceable to the new document, and vice versa.
- C. Waiver Request (MRB) - The Nonconformance Management System (eNMS) shall be used to document and request a waiver. If the supplier does not have access to this system, they shall request access through the GE Buyer. The "Material N/C Review Nonconformance Document" (Form GT82-3) may be used to document a waiver request when access to system is not available. Once eNMS is available all information from the GT82-3 must be transferred to eNMS.

Note: eNMS contains a user manual and an on-line help, which may be used as an aid for information.

- D. General Requirements for Documentation Nonconformance documentation, initial and otherwise, shall be prepared in accordance with this document.
1. Documentation may be either typed, handwritten in permanent ink, or an electronic entry.
 2. Documentation must be complete, legible, and understandable by an independent third party.
 3. The supplier is responsible for maintaining traceability of all nonconforming records. Nonconformance records shall be retained in accordance with [Appendix C](#).
- E. Minimum Requirements for Documentation
1. Initiator of the document
 2. Date of initiation

3. Identification of the document for traceability purposes (For example: nonconformance document number)
 4. Serial number traceability per S-1000 Section E - Traceability
 5. Total quantity of nonconformed items
 6. A detailed description of the nonconformance
 - a. A departure from a dimensional characteristic shall include the characteristic and must specify the extent of the departure (For example: .990" - 1.000" dimension actually checks 1.005"). A visual write-up shall be described by flaw type (For example: nick, scratch, dent), size (length, width and (or) depth) and where physically located on the part (or material).
 7. Identification of the affected specification, drawing, or other document if different than the part number.
 8. A detailed disposition
 9. Identification of the personnel making such disposition
- F. eNMS Documentation
1. The supplier shall assure that all information entered into eNMS is accurate and complete.
 2. Only violations to engineering drawing/specification requirements will be submitted into eNMS.
 3. Departures from in-process characteristics that will not impact any subsequent engineering drawing or specifications requirements shall be submitted for purchaser review and disposition on a Supplier Discrepancy Report (SDR) (Ref [S-399](#), [S-250](#), [S-363](#)). In-process characteristics are generally identified as such on the drawing or in the specification.

Note: When the engineering drawing is unknown to the supplier, the supplier shall contact the GE Quality Representative and obtain the proper drawing number and other pertinent information for eNMS submittal.
 4. After the nonconformance document is entered into eNMS, route the document to appropriate GE mailbox.
 5. The nonconformance document consists of the five-digit supplier code, followed by the two digit current year, followed by a unique four to seven digit alpha or numeric sequence code that ends in a number, which is used to prevent duplication.
 6. Changes to Nonconformance Documents – When a change needs to be made to a nonconformance document that does not contain any signatures on the document, the change can be made as long as the document is in the users mailbox. If there are signatures on the nonconformance document, the change must be coordinated through Central MRB (513) 243-1000.

7. Attachments - Photographs, sketches or other information may be attached to the nonconformance document to clarify the description of the nonconformance(s).
8. Nonconformance Document Quantity - The “NC QTY addressed on the document” refers to the total population of parts to be reviewed by MRB. This number will include parts at and beyond the supplier that have not been previously addressed by MRB. “Qty at Mfg. Source” indicates the total number of parts still within the supplier control.
9. Quantity Shipped by source without approval is automatically calculated by subtracting NC Qty addressed and Qty at Mfg. Source.
10. The Material Review Board will not be utilized to accept a part that is inadvertently installed into an assembly (inseparable or otherwise). A design change rather than a waiver shall always be used to introduce a new part number to a product model.
11. Nonconforming hardware shipped prior to issuance of CID shall be documented in the eNMS system. If all affected hardware has been shipped the “Qty at Mfg. Source” will be zero.
12. In cases where a sub-tier supplier has a nonconformance on an export controlled feature that a prime supplier does not have an export license to view, the sub-tier shall inform the prime supplier that they have a nonconformance on an export controlled feature and submit the nonconformance directly to GE. In all other cases the sub-tier shall submit the nonconformance to the prime supplier for submittal to GE for review.

D. III. PHYSICAL CONTROL OF NONCONFORMING MATERIAL

- A. Identification - Nonconforming material must be conspicuously marked, tagged or referenced on the product’s paperwork.
- B. Material Control - Nonconforming material pending PR/MRB disposition shall be controlled to preclude its unauthorized processing or use.
- C. Scrap Material
 1. Mutilation is required for all scrap product or material.
 2. Mutilation may be performed internally or by an external source.
 3. Scrap may be shipped to other internal locations for accumulation prior to mutilation.
 4. When mutilation is to be performed externally, the Supplier will submit for approval to the responsible GE Aviation function a procedure, which will outline the requirements for mutilation and ensure that scrap requiring mutilation is not sold for any other purpose.

D. IV. SPECIAL CONSIDERATIONS

- A. Unusual Visual Conditions
 1. Nonconforming Hardware - To preclude unfavorable GE Aviation customer reaction, the Unusual Visual Condition box will be checked on the eNMS nonconformance document

and concurrence will be obtained through the MRB and the Customer Program Quality Leader.

2. Conforming Hardware - If the part is conforming to a GE blueprint or specification requirement but is considered "Unusual Visual Condition", the manufacturing source must contact the responsible Quality representative listed in the Source Profile, who will work with the Customer Program Quality Leader for concurrence prior to the part being shipped. Or the manufacture can select UVC-Unusual Visual Condition from the SCWC under the header Quality/Nonconformance/UVC and submit their UVC directly to the CPQL or click link for [UVC Request Form](#).
- B. Parts with Special Cleaning Requirements - Special consideration needs to be given to rework and repair activities carried out on “oil-wetted” and “sump pressurization circuit” parts. It is very important to keep these parts free of hard particles that may eventually reach a bearing causing damage. For parts with cleaning requirements noted on the drawing the rework/repair procedure shall adhere to those requirements. Cleaning steps must be documented on the repair procedure.
- C. EMCP/LCP parts - Rework for parts initially found with a nonconforming condition that is not dimensionally described and may degrade the material properties are only allowed within the parameters of P1TF111, P1TF101 and P1TF9.
- D. Life of Die Waiver – If waiver is for Life of Die/Mold/Tool the nonconformance record must identify it as a life of Die/Mold/Tool document.
1. Life of Die Waiver is only applicable to hardware that is NOT tagged as ‘DoD participation’ in eNMS and the following applies:
 - a. The quantity block shall be left blank and the “Life of Tool” block shall be checked to identify the document as a Life of Die/Mold/Tool Waiver
 - b. The waiver is not required to be limited by quantity or specified time period, but applies directly to the life of the identified die/tool/mold or combination.
 - c. The specific die/tool/mold identification number(s) must be documented in the nonconformance description.
 - d. Any change to the die/tool/mold or combination will require re-evaluation of characteristics affected. Any new nonconformances identified as a result of the change will require a new waiver.
 - e. All parts produced and/or shipped under a LoD waiver must be traceable to the specific die/tool/mold or combination listed on the waiver.
 2. Hardware tagged as ‘DoD Participation’ in eNMS with Life of Tool Nonconformances will be processed per standard nonconforming hardware requirements with the following exceptions:
 - a. “Life of Die/Tool/Mold” option in eNMS will NOT be selected when initiating the nonconforming material document.

- b. The specific die/tool/mold identification number(s) must be documented in the Remarks field.
- c. The quantity block shall include a quantity which reflects all known nonconformances and an estimated future quantity to be produced in a reasonable timeframe based on demand and volume.
 - i. Supplier shall state anticipated reasonable time frame based on demand, volume and processing considerations such as:
 - a. Production volume on current P.O. and schedules
 - b. Time for acquisition of statistical data for CID Consideration (i.e. typically up to 30 pieces)
 - c. 4 months for CID processing time
 - d. Production windows for reworking tooling
 - ii. Typical timeframes for completion of process up through issuing CID:
 - a. 6 months for high volume hardware such Airfoils
 - b. 12-18 months for low volume hardware such as Structures Frames & Cases
- d. The waiver will be limited by quantity, but not limited by time.
- e. Quantity usage is not required to be entered in eNMS and suppliers are responsible to track usage, retain documentation, and ensure approved quantity is not exceeded.
- f. All parts produced and/or shipped must be traceable to the specific die/tool/mold or combination listed on the waiver.
- g. Any change to the die/tool/mold or combination will require re-evaluation of characteristics affected. Any new nonconformances identified as a result of the change will require a new waiver.

D. V. APPROVAL OF PRELIMINARY REVIEW (PR) PERSONNEL

- A. Requirements – Prior to performing the PR function, supplier personnel shall have at least three months working experience in either quality or manufacturing, shall be knowledgeable of the manufacturing processes and attend a training session.
- B. PR Training – The supplier is responsible for preparing the PR training package, including training and administration of the PR process. The training package shall include, as a minimum:
 - 1. Documentation and control of nonconforming material.
 - 2. PR review, evaluation and disposition.
 - 3. GE Aviation contractual requirements (i.e., S-specifications, nonstandard remarks, remarks or special instructions) that are part of the purchase order.

4. PR issues affecting raw material and special processes.
- C. Maintaining PR Approval - PR personnel shall complete periodic refresher training to maintain PR authorization. Training shall be completed every two years minimum.
- D. PR Membership – The supplier is responsible for authorization of PR personnel at their facility and shall maintain a list of those authorized to perform PR including their status (e.g., active, inactive). If PR authorization is revoked, the cause for such actions shall be documented.

D. VI. PRELIMINARY REVIEW RESPONSIBILITY

- A. Special Processes and Significant Processes when affected must be considered prior to providing the appropriate disposition. The appropriate Certifying Agent, for special processes or cognizant Design Engineer/Source Substantiation Engineer, for significant processes, must be contacted by the PR person for guidance.
- B. Authorized Personnel - The disposition must be documented and signed/stamped by an approved PR person before the action is taken.
- C. Authorized Dispositions - The following are dispositions that a PR person is authorized to make on nonconformances:
 1. Rework – This disposition shall be utilized when it is economically feasible to perform the rework. The rework disposition must:
 - a. Specify processing instructions.
 - b. Include method to verify acceptability of part after its completion.
 - c. Be approved by the appropriate Certifying Agent, if rework instructions include special processes different than required for normal processing. (For example: not a planned operation on the approved sequence list)
 - d. Be evaluated and approved per the requirements of [S-1001](#) Supplier Source Substantiation prior to performing the rework; if rework involves significant processes or approved sequencing of significant processes.

Note 1: The use of rework notes included on older drawings requires PR disposition.

Note 2: The use of repair notes included on older drawings or specifications requires MRB disposition or as directed via a standard repair procedure.

Note 3: Rework performed in conjunction with a repair procedure does not require re-submission to MRB.

2. Scrap – This disposition shall be utilized when nonconforming product is not usable for its intended purpose and cannot be economically reworked or cannot be repaired in a manner acceptable to MRB. Material, when given a “scrap” disposition, shall be processed in accordance with paragraph D.III.C.

3. Return – This disposition shall be utilized when it is more practical to return the product to the Sub-tier supplier from which it came.
 4. Submit Nonconformance Document to Purchaser/MRB – When none of the aforementioned dispositions are appropriate, the nonconformance shall be documented in eNMS and submitted to the purchaser for review and disposition (reference paragraph D.II.C).
- D. MRB Directed Disposition - The PR person, when directed by MRB, shall document MRB dispositions in accordance with paragraph D.II.
1. If PR personnel utilize the MRB directed disposition it must be controlled to meet the documented limits of the directed disposition.
 2. The use of the MRB directed disposition must be logged each time in eNMS when the MRB directed disposition is applied.
- E. Continue to Process - At times, it can be more practical to continue processing a part with a documented nonconformance (or departure from an in-process characteristic) to a later point in the manufacturing process prior to effecting the appropriate action. The "continue to process" determination can only be applied by approved PR personnel and so long as the nonconformance (or departure from an in-process characteristic) shall not be altered or covered up to preclude its proper review and/or action. The PR person must document how far to continue and the appropriate action.
1. This provision does not allow the initiation of a repair of a nonconformance prior to MRB authorization.
 2. Product history should be considered to assure manufacturing risk to process further is low or nonexistent.
 3. As an alternative to submitting the nonconformance to MRB for disposition, the PR person may use CTP when a Change in Design, CID, is processed. An issued CID, which causes the part to fully conform to the new limits, shall be used to determine the previously identified nonconformance is no longer nonconforming and referenced on the nonconformance record.
 4. Nonconforming product shipped to GE Aviation prior to issuance of CID shall be documented and processed as a nonconformance. This documents the existence of the condition and indicates engineering acceptance of the condition of parts shipped to GE Aviation.
 5. The issuance of a CID after the completion date of manufacture does not retroactively make previously manufactured nonconforming material conforming.
- F. Corrective Action - Consideration shall be given during the PR process relative to appropriate corrective action associated with the nonconformance(s) (reference paragraph D.XI).
- G. This provision does not allow deviation from GE Aviation design requirements unless a deviation has been authorized by the purchaser.

D. VII. PURCHASER REVIEW/MRB DISPOSITIONS

- A. Dispositions - The following are the types of dispositions utilized by the MRB. If sufficient information is not available on the documentation provided, additional information, inspections, etc., as necessary, shall be requested. Assure that any additional information is added to the nonconformance document to allow for future review. The disposition must be documented and signed by the all required review board members before action is taken.

Note: Alternate disposition/status terms may be used when it is clear the intent is within the scope of this instruction. (For example: Multi [when more than one disposition applies to sub-groups of parts], Void, etc.)

1. Accept - Use as is
 2. Repair (See [paragraph D.VIII](#))
 3. Reject - The purchaser will reject the nonconformance when an accept or repair disposition cannot be made. Once the nonconformance has been rejected, other actions may be considered, by the supplier, such as:
 - a. Returning the nonconformance record to preliminary review for disposition;
 - b. Developing a repair method and re-submitting the nonconformance to the purchaser.
- B. Accept Disposition Based on Sample Inspection Data - In certain cases (for example: processes are in control, large quantities are produced, etc.), it is permissible for MRB to accept material based on inspection of a sample, which represents those parts. Any number of parts may be sampled provided parts are selected without bias from the available parts. The following procedure shall be used in such circumstances.
1. Statistical Analysis - Based on a sample greater than 30 parts, selected without bias from the available and inspectable parts and representative of the process that produced the nonconformance, a statistical analysis may be completed to generate +/- 3 sigma tolerance intervals. For instances where 30 or less parts are available, a statistical analysis may be performed which produces tolerance intervals with 95% confidence that at least 99% of all values are included. Use of worksheet available in eNMS is the preferred method for analysis; however, equivalent analysis tools (e.g. Minitab) may be used. Samples of greater than 100 parts must utilize alternative methods. The acceptable analysis shall indicate when the data is distributed normally. If the data is not distributed normally, then a statistician shall be consulted for alternative analysis. The spreadsheet link provided reverts to an \bar{x} +/- 3 sigma standard deviation estimate once the sample size is greater than 30. This insures that the historical standard of +/- 3 sigma will be met or exceeded for all sample sizes. The statistical analysis must include the number of parts used for the analysis and how those parts were selected. The eNMS document shall clearly indicate when statistical analysis has been used to determine nonconformance condition. If the worksheet in eNMS was not used, then the statistical analysis shall be attached to or referenced within the nonconformance document and retained as a permanent part of the record.

2. Nonconformance Quantity - When a statistical analysis has been properly completed, the assumed nonconforming population quantity shall be calculated based on a 95% upper confidence limit on the percentage of the suspect population that was calculated to be defective, call this value $p(d)^*$. The predicted nonconformance quantity that shall be submitted to MRB is $p(d)$ times the total quantity of suspect parts still within GE Aviation/Supplier control. Use the statistical analysis (analysis.xls) worksheet or equivalent tool to calculate the predicted nonconformance quantity. When it is clear that all parts are nonconforming, the total suspect quantity will be submitted to MRB. The analysis worksheet or equivalent shall be included with the MRB by attachment, linkage or remark and include the total suspect population count, the predicted nonconforming quantity and evidence of the formula used for calculation.

- a. If n = sample size and d = number nonconforming in sample, then:

$$p(d) = d/n + (1.645)((d/n(1-d/n))/n)^{1/2}$$

- C. Purchaser Directed Acceptance/ Directed Disposition - Purchaser may document dispositions for implementation by supplier PR personnel when the disposition is always the same for a certain nonconformance. The following details the types of MRB directed dispositions available and respective requirements.

Consideration for Use - When nonconforming product is submitted for disposition and meets the criteria as a minor nonconformance, MRB may consider acceptance of additional nonconforming product that is expected to be nonconforming as a result of a pre-existing condition caused by an error during manufacture: For example: the existing tooling or process is found to be incapable of producing material to the specified requirements, the existing process planning is found to depart from the specified requirements.

1. Direct Acceptance

- a. Authorization. All directed acceptance approvals will be clearly documented in eNMS. Such approval shall authorize PR personnel to accept future nonconformances, subject to the documented limits of the approval. The directed acceptance recorded shall clearly state:
 - i. That it is an MRB directed disposition
 - ii. The extent of the allowance
 - a. Nonconformance limits
 - b. Time period or quantity
 - c. Any special requirements associated with the nonconformance
- b. Approvals shall not exceed a six-month period or the equivalent production quantity. All reasonable efforts should be made to reduce or eliminate the occurrence of such nonconformances. If additional time or quantity is required, any subsequent directed acceptance will require the documented approval of the responsible GE Aviation CoE Quality Leader or Sourcing Quality Commodity Leader, prior to approval. The MRB

- Chair shall ensure that reference to this approval is noted in the MRB record by remark, linkage, or attachment.
- c. Implementation - The PR person will implement the MRB directed acceptance, referencing the approved nonconformance record in eNMS, which established the MRB directed acceptance on the initial nonconformance record (For example: router, D.O. card, etc.).
 - i. The supplier will implement this allowance by applying the quantity of parts to the active directed disposition/acceptance for the nonconforming characteristics within the eNMS system prior to shipping the hardware.
 - ii. The supplier is responsible to document each use of the directed disposition prior to shipping the hardware, assure compliance to quantity and time limits, and assure that no unapproved nonconformances are shipped. Nonconformances not approved by authorized directed dispositions shall be submitted to GE Aviation MRB for review.
2. Directed Disposition Standard Repair
- a. Authorization - All standard repair approvals will be clearly documented in eNMS. Such approvals shall authorize PR personnel to repair future nonconformances, subject to the documented limits of the approval.
 - b. The Standard repair acceptance record shall clearly state:
 - i. That it is an MRB standard repair disposition
 - ii. The extent of the approval
 - a. Nonconformance limits (part number and characteristic limits)
 - b. Any special limitations associated with the nonconformance
 - c. Approvals **shall not exceed a twelve (12) month period** or the equivalent production quantity. If additional time or quantity is required, a new standard repair authorization by MRB shall be required. Any subsequent directed disposition Standard Repair will require the documented approval of the responsible GE Aviation CoE Quality Leader or Sourcing Quality Commodity Leader, prior to approval. The MRB Chair shall ensure that reference to this approval is noted in the MRB record by remark, linkage, or attachment.
 - d. Implementation. Once the standard repair has been approved for use, PR personnel shall authorize (For example: "Repair per standard repair procedure FAB0001") its use, for nonconformances within the scope of the approved standard repair procedure, on the initial nonconformance record (For example: router, D.O. card, etc.).
 - e. The Supplier shall assure each use of the standard repair is added to existing MRB data in eNMS.

- i. The supplier will implement this allowance by applying the quantity of parts to the active directed disposition/standard repair for the nonconforming characteristics within the eNMS system.
- ii. The supplier is responsible to document each use of the directed disposition prior to shipping the hardware, assure compliance to quantity and time limits, and assure that no unapproved nonconformances are shipped. Nonconformances not approved by authorized directed dispositions shall be submitted to GE Aviation MRB for review.

D. VIII. REPAIR OF NONCONFORMING MATERIAL

- A. Repair Forms. The electronic repair form in eNMS shall be used to document repairs. Repair procedure documentation must provide for all appropriate approvals (For example: Certifying Agent).
1. Repair Approvals - Nonconforming items on GE Aviation designed material will not be repaired by any method without approval by GE Material Review Board. Authorization to begin the repair will consist of the repair status of "RELEASED" and shall consist of an approved repair sign off in the nonconformance document, for a specific number of parts, defining a repair method in eNMS. Repair status of released will not be granted until the following approvals have been obtained:
 - a. Approvals:
 - i. MRB Engineering representative
 - ii. MRB Chairperson
 - iii. DoD representative, when applicable
 - iv. FAA representative, when applicable
 - v. Certifying Agent for repair procedures that include special processes different than required for normal processing (For example: not a planned operation on the approved sequence list). Certifying Agent signatures on repairs are only valid for one (1) year.
 - a. All repair procedures (submitted by a supplier participant) that effect part chemistry, physical properties, or include processing through special process(s) will be directed through the cognizant GE Aviation Laboratory. The supplier participant quality MRB representative is responsible to assure compliance to this requirement.
 - b. Repairs containing special process - Assure the facility performing this process is a certified/approved source for VSE hardware. This is the supplier's responsibility to assure the facility is approved.

NOTE: Listing the source on the repair procedure does not automatically make them a certified/approved source. Reference [S-1001](#) Certification of Special Processes and S-1000 [Section C - Control of Purchases](#).

NOTE: For non-VSE hardware although not required, using a certified/approved source is recommended. Reference S-1000 [Section C - Control of Purchases](#) for requirements if you do not use a certified/approved source.

2. Annual review of repair forms - Repairs forms which contain dated approval signatures and are over one year old are reviewed and re-approved by all required approvers, including Certifying agents, prior to MRB repair approval.
 3. Repair procedure content - The repair procedure will document, in detail, the exact method to be followed during the repair process i.e., restrictions or limitations on use of the repair, related characteristics that may be affected during the repair process, tooling, special processes, inspection or test requirements, and any other special requirements or considerations.
- B. Nonconformance in conjunction with repairs - When another nonconforming characteristic will require MRB disposition in conjunction with a repair, it may be added to the affected nonconformance record (or cross referenced) for traceability. Nonconformances caused by the repair process shall be submitted to MRB for disposition unless authorized by the repair procedure.
- C. Repair Completion
1. The repair shall be completed as soon as possible.
 2. If more than six (6) months will be required to complete the repair, a note shall be added on the nonconformance document, with the reason why it will take more than six (6) months. The purchaser reserves the right to reject parts not repaired within six months.
 3. The purchaser reserves the right to request evidence of repair completion.
 - a. Review prior to acceptance or after repair. The GEQR shall assure preparation of Form “Nonconformance Document Lot Identification Card” (NDLIC) in eNMS to authorize supplier release of product pending MRB disposition when a supplier’s part(s) requires physical review prior to final disposition.
- D. Repair procedures on drawing – GE Aviation have discontinued the practice of specifying repair procedures on the drawing; however, there are still drawings in the system with repair procedures. In these instances, a nonconformance document will be prepared along with a proposed repair procedure or standard repair procedure, after which it will be handled in the same manner as all other repair procedures.
- E. If eNMS is unavailable for an extended period a repair procedure may be processed using MR Repair Procedure form GT82-1 and GT82-2. Once eNMS is available the form shall be attached to an eNMS document.

D. IX. REQUEST FOR SHIPMENT WITH OPEN NONCONFORMANCE

- A. When the purchaser request shipment of material with open nonconformance through a NDLIC in the eNMS system. The supplier shall:

1. Assure material and/or the requested documentation is forwarded to the purchaser on or before the date identified on the Nonconformance Document Lot Identification Card.
2. Assure a partial release stamp is used on the shipping document/bar code label per S-1000 [Appendix E](#).
3. Ship nonconforming material separately.
4. Notify the purchaser when material on an open nonconformance document is being scrapped or no longer requires purchaser disposition/review.

D. X. DEVIATION

- A. Documentation - A request for minor deviation shall be submitted on Form GT3646 to purchaser's Sourcing Contract Administration. A copy of this form may be obtained from the purchaser. The form shall be typed to facilitate processing. Symbols (i.e., critical/major characteristics, geometric tolerances, etc.) may be hand printed.
- B. Purchaser Approval - Upon receipt of purchaser approval, the supplier may begin to manufacture. The affected material or items meeting the deviation acceptance limits shall be handled as conforming material and not require further purchaser disposition.
- C. Deviation Limits - Characteristic accountability requirements (e.g. inspection, sampling, etc.) must be adequate, documented, and monitored in order to assure that product covered by deviations and waivers are within the specified acceptance limits. Manufacture beyond the scope (quantity or time period) of deviation shall be requested via another form GT3646. (Note: If material or item manufactured utilizing the approved deviation does not fully comply with the limits as documented, the material or item is nonconforming and shall be processed in accordance with paragraph D.III).
- D. Deviation Versus Waiver - This paragraph details conditions under which either a minor deviation or a minor waiver (not both) is required to authorize acceptance of items which are nonconforming or will be nonconforming after manufacture. This paragraph also defines the point at which manufacture of an item begins; a key concept in making the deviation/waiver decision.
 1. Deviation Situations - A deviation shall be used in the following situations:
 - a. A temporary departure from specified requirements is necessary to meet customer commitments. A design change shall be processed if the temporary departure is to become permanent.
 - b. A temporary departure from specified requirements is necessary to allow data gathering to verify the need for a permanent change in requirements to improve the design or producibility of an item.
 - c. A deviation shall not be used during manufacture to address a known error in the process, procedure, or tooling.
 - d. Temporary use of an alternate material.

- e. Temporary use of alternate tooling.
- f. Temporary use of an alternate process.
- 2. Waiver Situations - A waiver shall be used in the following situations:
 - a. Acceptance of a characteristic that has been generated and is determined to be nonconforming.
 - b. Acceptance of a characteristic that is expected to be made nonconforming as a result of a pre-existing condition caused by an error during manufacture; e.g. the existing tooling or process is found to be incapable of producing material to the specified requirements, the existing process planning is found to depart from the specified requirements.

D. XI. EVALUATION OF CORRECTIVE ACTION

- A. Responsibility - The supplier has the responsibility to develop, document and maintain a corrective action system to reduce the amount of nonconforming product.
- B. Consideration - Every nonconformance requires consideration for corrective action. The final decision as to the appropriateness of the supplier corrective action decision and plan, relative to nonconformances submitted to the purchaser for review and disposition, shall rest with the purchaser.
- C. Supplier Documentation - Corrective actions, when taken, shall be documented and shall include, as a minimum, the following:
 - 1. Pertinent information describing the problem requiring corrective action.
 - 2. What went wrong and why (root cause and analysis).
 - 3. The required corrective action.
 - 4. The functions or individuals responsible for implementing the corrective action.
 - 5. When the corrective action will be implemented, if not immediate.
- D. Effectivity - The supplier shall follow up on corrective action to ensure effective implementation.
- E. Purchaser Authority - When the suppliers corrective action program is ineffective in reducing or eliminating the correctable root causes of nonconformance, the purchaser may elect to reject items or lots containing non-conforming material.
- F. Nonconformance Trending - Supplier nonconformance trends will be monitored by the purchaser via NMS. If an adverse trend is detected, the data will be evaluated and if deemed appropriate the purchaser shall issue a request for corrective action.
 - 1. Supplier Participants and those Revenue Share Participants with access to GE Aviation field MRB disposition will be responsible for maintaining their own trending analysis. This trending responsibility will apply only to part numbers of those specific engine

programs for which the supplier has been qualified as a participant. Adverse trends will require internal investigation and issuance of corrective actions.

D. XII. DISPOSITIONING AND NOTIFICATION OF NONCONFORMING PRODUCT THAT HAS BEEN INADVERTENTLY SHIPPED

- A. The following provides a vehicle for providing purchaser disposition of nonconforming material shipped without having been dispositioned by the purchaser.
1. Documentation - The eNMS document shall be prepared as normal per paragraph D.II.F.
 2. Nonconformance - When documenting the nonconformance, it may be necessary to determine the nonconformance magnitude by either:
 - a. Sample inspection data to establish the specific nonconformance magnitude.
 - b. Determining the nonconformance magnitude by an alternate method such as analysis of historical data that is capable of representing the nonconformance magnitude.
 - c. Conducting a controlled experiment that is capable of simulating the nonconformance magnitude.

D. XIII. SUPPLIER DESIGN

- A. Any characteristic found nonconforming that is documented on the purchaser's drawing, Master Envelope Drawing (MED), Design Procurement Drawing (DPD) and referenced specifications is required to go through the purchaser's MRB system. Any other product nonconformances will be subject to the Supplier's internal nonconforming material control system. The supplier's nonconforming material control system shall be the same as outlined in this appendix except as follows:
1. GE Aviation reserves the right to disapprove the supplier's internal MRB system with respect to the allowances listed herein. Additionally, an 'accept' or 'repair' disposition of any nonconforming characteristic on a detail part, sub-assembly, or assembly defined by a supplier drawing that could affect form, fit, function, life, reliability, or maintainability of such part, sub-assembly or assembly, must also include concurrence of GE Aviation design engineering and quality. The supplier's organization shall ensure that the extent of such GE Aviation involvement is incorporated into their non-conforming material control system.
 2. NACELLES - For supplier designed Nacelle hardware where the supplier drawings and specifications reflect the Purchaser's requirements flowed down via Specification, Statement of Work or other contractual vehicle, the supplier's drawings and specifications may reside in Digital Workbench. The supplier will utilize their own internal non-conforming material control system except where Purchaser directs otherwise.
 3. Corrective Action Board (CAB) - The Supplier's CAB shall assure that corrective action needs and implementation are reviewed and effective for supplier and purchaser design characteristics.

4. Material Review Board (MRB) Responsibility - The Supplier is responsible for dispositioning nonconformances of their own designs. The MRB shall be chaired by a Quality representative of their organization and shall include, as required, personnel representing other organizations within their facility, as necessary, to determine appropriate disposition on nonconforming material. As a minimum, the MRB shall consist of a Quality chairperson and one representative of the Engineering function that is responsible for product design.
 - a. Approval of MRB Personnel
 - i. Minimum Qualifications:
 - a. The MRB quality representative must have at least three months working experience in either a quality or manufacturing function associated with the type(s) of GE Aviation hardware that will be evaluated in their MRB role.
 - b. The MRB engineering representative must have a four year engineering/technical degree in a relevant design discipline or be a technical representative having credentials considered equivalent to the above criteria by his/her manager, have at least two years of design experience on the applicable type(s) of GE Aviation hardware, and an understanding of GE Aviation design requirements.
 - b. Training - All MRB representatives must complete supplier provided training that is directed towards MRB requirements and details of the nonconforming material control processes. This training shall include, as a minimum, the following items:
 - i. Documentation and control of nonconforming material.
 - ii. MRB review, evaluation and disposition of nonconforming material.
 - iii. GE Aviation contractual requirements.
 - iv. Corrective action requirements.
 - c. Re-training - Every two (2) years, all Quality and Engineering MRB personnel must attend a refresher training session, which will include all items described in the preceding paragraph.
5. Government Involvement - Since GE Aviation is a contractor with the Department of Defense (DoD); the suppliers' applicable DoD agency will exercise the right to participate in activity related to nonconforming material control. The degree of government participation will be as determined by the applicable DoD agency. The supplier's organization shall assure that the extent of DoD involvement is incorporated into the non-conforming material control system.
6. Nonconformance Documentation
 - a. The nonconformance record used shall be capable of being utilized for internal MRB disposition. The nonconformance record may be designed to accommodate both PR and MRB dispositioning. The nonconformance record may be computerized.

- b. Repair Forms - Repair procedures shall either be documented on the nonconformance document, or for more complex repairs, documented on a form suitable for the complexity of the repair.
 - i. Repair Procedure Content - The repair procedure will document, in detail, the exact method to be followed during the repair process, (i.e. restrictions or limitations for use of the repair, related characteristics to be re-inspected after completion of the repair, tooling, special process inspection or test requirements and any other special requirements or considerations).

NOTE: Special consideration and instructions must be given to assure that foreign object damage or contaminants are not introduced into the component during the repair process.
 - ii. Approvals for Repair:
 - a. MRB Engineering Representative
 - b. MRB Chairperson
 - c. DoD Representative, when required
 - d. Supplier technical resource with responsibility for special process(s) that are referenced in the repair procedure
 - iii. Revisions to Repair Procedures - A revision to a repair procedure after being approved by MRB and the DoD representative, as applicable, require re-approval by all signers and/or the certifying agent where applicable. Strictly administrative changes need not go through the review process but must be signed for by the MRB chairperson.
 - iv. Repair Procedure Limitation - Authorization to perform a repair is limited to the provisions contained within the repair procedure. Items within the repair procedure are not to be performed more than once, unless specifically provided for within the repair procedure document. For example, re-welding a nonconformance more than once, unless specifically allowed, shall require MRB authorization.
- c. When it is determined that product was inadvertently overlooked and was shipped to the purchaser with nonconformances that were not dispositioned, but which do not affect the purchaser's requirements, the supplier shall:
 - i. Promptly notify the purchaser of the escape, including the following information:
 - a. Part number, engine program, quantity, and nomenclature
 - b. Description of nonconformance
 - c. Statement of material acceptability for use based on engineering evaluation or current status of engineering evaluation

- d. Serial numbers and ship dates of material which potentially exceed acceptance limits
 - e. Proposed required action by the purchaser
 - ii. Provide a copy of the internal documentation that disposes the nonconforming product to the cognizant GE Aviation Quality Representative.
7. Records shall be maintained of nonconforming material, dispositions, assignable causes, corrective actions, and effectiveness of corrective action per [Appendix C](#).

B. Incorrect Parts

1. The Material Review Board will not be utilized to accept a part that is inadvertently installed into an assembly (inseparable or otherwise) or end item configuration which is different from the bill of material or parts list. The Material Review Board will not be utilized to accept an end item configuration or assembly that is missing a part or component from the bill of material or parts list. A design change rather than a waiver shall always be used to introduce a new part number to a product model once the baseline configuration has been established. The Material Review Board will not be utilized to disposition shipped product. A waiver may be used when the item (part number) is required to complete an approved MRB Repair Procedure. (For example: Using an insert, or a larger insert than is called for on the parts list, to repair a hole that has been drilled oversize, while still using the correct bolt that is called out on the parts list.)

D. XIV. GOVERNMENT CONTRACT QUALITY ASSURANCE (GCQA)

- A. If Government Contract Quality Assurance applies (as required by the purchase agreement/order), the supplier shall submit a copy of the approved nonconformance document to the DoD representative at the time of shipment (for information purposes only).

Note: This provision does not eliminate DoD approval of the nonconformance document, as required.

D. XV. REVENUE SHARING PARTICIPANTS WITH DESIGN RESPONSIBILITY

- A. See S-specification [S-477](#) for nonconformance requirements.

APPENDIX E

PREPARATION AND IDENTIFICATION OF SUPPLIES FOR SHIPMENT

E. 1. Scope

This appendix provides direction for preparation and identification of supplies for shipment.

E. 2. Requirements

- A. Suppliers shall review Purchaser's requirements and their own internal procedures to ensure that required documentation is included with shipments and that parts/material are properly marked, identified and packaged. Shipments cannot be made until a Purchase Order is received from the Purchaser. Specific attention should be given to the following areas:
1. When packing slips are used, the number one copy must be on the outside of the box/container, not inside.
 2. When a bar coded shipping label is used for the shipment of a single box/container, a removable bar code label, as well as a permanent label shall be affixed to the outside of the box/container. When multiple boxes/containers comprise a shipment, the first box or container shall have a removable master bar code label, as well as a permanent master bar code label affixed to it and all additional boxes/containers shall have a single permanent bar code label affixed to them.
 - a. A removable bar code label may be affixed to the outside of their applicable box or container by placing it inside a transparent enclosure or envelope that will allow for the clear display of the label.
 - b. Bar coded shipping labels shall not be used for shipment of product to GE-A, unless written approval to do so has been granted by the Purchaser.
 3. Examine carefully the Purchase Order/Contract requirements for the parts/material to be shipped. If authorization for shipment is required to be performed by the GEQR, and/or the government representative, make sure that all necessary inspections have been performed and signatures obtained before the parts/material are presented for review. Determine if the parts/material are on Partial Release for any reason. If they are, ensure that applicable "Partial Release" status and not "Full Release" status is reflected on the applicable packing slip, or shipping bar code label(s). A frequent cause for this situation is open nonconformance document and/or open Source Substantiation.
 4. When shipments require radiographic film and/or certifications to be included, ensure that they are with the parts/material to be shipped and that they are packed properly. Such material shall be packed with the Packing Slip, or with the removable bar code label when a transparent envelope is used. If necessary, these items may be placed inside the first box/container. When placed inside, mark the top of the box to indicate what is packed inside.
 5. Boxes and containers must be properly marked per the Purchase Order requirements. Marking must be clear and legible.

6. When a shipment is made using more than one box/container, each box/container must be labeled 1 of _____, 2 of _____, etc. Each box/container must have all the appropriate marking. The packing slip or removable master bar coded shipping label must be attached to the box/container labeled 1 of _____. The total number of boxes/containers, included in the shipment, shall also be identified in the upper right hand corner of the removable master bar coded shipping label.
7. Whenever possible, no more than one line item shall be packed in a given box/container. If more than one line item (or more than one Purchase Order) is included in the same box/container, then the outside of the box/container must contain the information per Purchase Order requirements.
8. Ensure that packages, cartons, boxes, containers and packaging material are suitable to adequately protect the parts/material contained within. See Environmentally Friendly Packaging paragraph for suggested tips.

E. 3. Packaging Recommendation/Guidelines

- A. Serialized Parts – Serialized parts should include the SN of the hardware on the outside of the container. The SN could either be documented on the outside of the container or as a list attached to the outside of the container marked “S/N List”.
- B. Packaging Design – Packaging design suggestions can be found on the Supply Chain Web Center (SCWC) at “Packshop Packdesign” listed under “Delivery & Logistics”.
- C. Package Quantities – Package quantity requirements can be found at “Packshop Packdesign” listed under “Delivery & Logistics”.
- D. Questions regarding packaging requirements can be directed to “Planning and Logistics Quality Leader” through buyer.

E. 4. Environmentally Friendly Packaging

- A. Before you order packaging, sign the next contract for packaging, or change a packaging process line, consider the following:
 1. Use returnable or multi-trip containers
 2. Use packaging made from recycled materials
 3. With multi-component packaging (i.e. cardboard/wood/plastic), use designs which allow the individual materials to be readily separated and recycled.
 4. Minimize additional packaging materials used solely for cosmetic rather than functional reasons.
 5. Avoid packaging materials that cannot be recycled or reused.
 6. Use unbleached paper and cardboard packaging
 7. Avoid printing inks that contain heavy metals or are difficult to bleach from recycled paper.
 8. Avoid packaging materials that may contain toxic stabilizers or additives.
 9. Whenever possible, directly reuse packaging in which material is shipped.
 10. Print specific instructions for recycling the packaging on the outside of the container.

11. For efficient shipment to recycling centers, avoid overly bulky materials or other packaging that is difficult to break down.
12. Investigate legislative trends to determine if your current packaging is potentially vulnerable to regional packaging bans, especially prior to making long-term contract or process commitments.

APPENDIX F

REQUIREMENTS FOR SUPPLIER SOFTWARE QUALITY ASSURANCE PROGRAMS

F. 1. Scope

The purpose of this appendix is to set forth the minimum requirements for a Software Quality Assurance (SQA) Program for which a supplier must implement for GE-A product software or software developed or used in the design, manufacture, inspection, or test of GE-A products.

F. 2. Applicability and Scope

- A. This appendix applies to software that is generated and/or used in fulfillment of Purchase Order requirements.
- B. This appendix covers the following CLASSES of source software: Class I: Software which comprises all or part of a product which will be delivered to GE-A or a GE-A Customer. Class II software used to create/control/inspect/test characteristics on GE – Aviation product, that are validated by virtue of the software being under an approval and change control system. For both Class I and Class II software, the supplier is responsible for notifying GE-A of proprietary right claims, in writing, prior to execution of the Purchase Order.

F. 3. Requirements

- A. These requirements are in addition to other Purchase Order requirements.

F. 4. General Requirements

- A. The objective of the software quality program shall be to ensure the quality of:
 - 1. Software and its documentation.
 - 2. The process used to produce software.
- B. Supplier personnel responsible for ensuring compliance with the software quality program requirements shall have the resources, responsibility, authority, and organizational freedom to permit objective evaluations and to initiate and verify corrective actions. The persons conducting software quality evaluations of a product or activity shall not be the persons who developed the product, performed the activity, or are responsible for the product or activity, (this does not preclude members of the development team from participating in these evaluations). The supplier shall assign responsibility for the fulfillment of, and for ensuring compliance with, the software quality program requirements.
- C. The software quality program, including procedures, processes, and products, shall be documented. The software quality program is subject to review by GE-A, and may be disapproved by GE-A whenever the program does not meet the requirements of the Purchase Order.
- D. A complete review of the Purchase Order to identify and make timely provision for acquiring or developing the resources and skills required for implementing the software quality program shall be conducted. The product/process source shall prepare plans for applying the documented software quality program to the Purchase Order. These plans shall

- be documented in a GE-A format, when so specified in the Purchase Order. Authorized personnel shall issue plans with a revision history maintained.
- E. The software quality program shall be implemented in accordance with the documented software quality plans and shall adhere to the program for the duration of the Purchase Order. The software quality program shall be fully integrated with the activities required by the Purchase Order.
- F. The supplier shall conduct on-going evaluations of the processes used in software development and the resulting software and associated documentation to ensure that all supplier requirements have been met and that internal coordination has been conducted in accordance with the software plans.
- G. The supplier shall prepare and maintain records of software quality program activities required by the purchase order.
1. A software quality evaluation record shall be prepared for each evaluation required by the Purchase Order. These records shall be in the product/process source's format and shall contain the following items as a minimum:
 - a. Evaluation date
 - b. Evaluation participants
 - c. Evaluation criteria
 - d. Evaluation results, including detected problems, with reference to the appropriate software problem reports, as applicable.
 - e. Recommended corrective action. (Generally, this type of record is maintained for Class I software).
 2. All other software quality records shall be prepared in the suppliers' format. (Generally, this type of record is maintained for Class II software).
- H. When a software-related problem or non-conformance has been detected, it shall be documented and shall serve as input for software corrective action. The supplier shall:
1. Ensure that action is initiated to correct the defect and the cause of the defect, and that adverse trends are identified and reversed.
 2. Monitor and track the software corrective actions to ensure timely and positive corrective action.
 3. Management shall review the software quality program at intervals as specified in the software quality program.
 4. Ensure that applicable subcontracted software meets the requirement of this specification, as well as additional Purchase Order requirements.
 5. Prior to the introduction of new or revised support software (e.g., compilers, operating systems, etc.) which is used for the computation, interpretation, assembly, linkage, or working environment of Class I or Class II software, a documented evaluation to determine the impact on the Class I or Class II software shall be conducted.

6. Software and software quality records shall be maintained in accordance with S-1000, [Appendix C](#).

F. 5. Class I Software Requirements

- A. A Software Quality Assurance program for all Class I software covered by the Purchase Order shall be documented and maintained in the form of a Software Quality Assurance Program Plan. This plan may be in supplier format unless otherwise specified in the Purchase Order.
- B. The software quality assurance program shall provide for the performance of the following activities by personnel as defined in paragraph [F.4.B](#) of this appendix:
 1. The performance of both scheduled and non-scheduled evaluations of the software development, library control, corrective action, testing and software configuration management activities to ensure compliance with all applicable requirements, plans, procedures, and programming standards and conventions.
 2. The independent review, prior to release to GE-A, of all contractually or regulatory required software plans, procedures, code, and documentation for:
 - a. Completeness
 - b. Compliance with applicable standards and conventions
 - c. Assurance that all approved and only approved changes are implemented
 - d. Traceability of requirements from one document to another
 - e. All necessary approvals
 - f. Compliance to additional purchase order requirements
 - g. Action items shall be documented and the disposition verified for all identified discrepancies
 3. The participation in any scheduled software design reviews. All identified problems from these reviews shall be documented and have corrective action disposition, prior to the approval of the design.
 4. The assurance that an analysis of software requirements for testability has been performed.
 5. The review of test plans, specifications, and procedures for compliance with design requirements, and to ensure that all approved, and only approved changes are incorporated.
 6. The monitoring or participation in the testing activities to ensure adherence to approved plans and procedures, to ensure that the identification of the software version has been documented, and to ensure the test results are accurately documented. The test results shall be reviewed for compliance to the test criteria.
 7. The assurance that test related media and documentation are maintained.
 8. The assurance that all software and software documentation released to GE-A conforms to all software related Purchase Order requirements.

9. The participation in any scheduled software configuration audits. All identified problems from these audits shall be documented and have corrective action disposition before production release of the software to GE-A.
 10. The assurance that the software's integrity during handling, storage, preservation, packaging, marking, and shipping.
- F. 6. Class II Software Requirements
- A. A Software Quality Assurance program for all CLASS II software shall be documented and maintained. This program shall include:
 1. Software Requirements Definition: Prior to designing and coding, the quality assurance program shall ensure that an approved requirements definition document exists, (e.g. drawings/specifications).
 2. Design Code Instructions/Documentation: The Software Quality Assurance program shall ensure properly structured, and adequately documented software. This may be done through documented software development standards.
 3. Test Program Validation: The quality assurance program shall ensure that the software performs as intended. Objective evidence of the validation process shall be maintained for new and revised software. For revised software, re-validation must be performed to the portion of the code that has been modified. Records shall be maintained of the test program validation activity including approval to release for use.
 4. Software Identification/Change Control: The quality assurance program shall ensure that the software is uniquely identified. All software changes must be appropriately reviewed. The change control procedure for the software shall be documented, and a revision history maintained.
 5. Identification of Software at Operations: The quality assurance program shall ensure that the software is uniquely identified in the appropriate work instructions.
 6. Software Media Control: The quality assurance program must protect the software media from unauthorized changes. Protection methods could include, but are not limited to, password protection, write protect labels, checksums, quality audits, object-only code releases, or floppy disk without a read/write notch. Access to obsolete software for design, manufacture, inspection, or test of GE-A products shall be prevented.

APPENDIX G

CONTRACTUAL REQUIREMENTS FOR BASIC QUALITY SYSTEM ACCREDITATION

- G. 1. AS9100, AS9120 or ISO9001 Accreditation (as applicable)
- A. Contact CRBs approved that are listed in the OASIS database. The URL is http://www.iaqg.sae.org/servlets/index?PORTAL_CODE=IAQG. A free registration is required.
 - B. Schedule the AS9100 assessment or ISO9001 to allow adequate time to address findings: investigate root cause, develop corrective action plan, implement corrective action, and have findings closed by CRB. This must be completed prior to the due date of the systems approval in the GE-A audit schedule.
 - C. Ensure that the CRB meets the requirements as listed below in completion of the AS9100, AS9120 or ISO9001 assessment.
 - D. Send copies of all relevant data to GE-A upon receiving certification as objective evidence of compliance to GE-A's requirements.
 - 1. Certificate of certification to AS9100, AS9120 or ISO9001
 - 2. All findings from the assessment including corrective action as approved by the CRB
 - 3. CRB audit report
 - 4. Any other referenced documentation
 - 5. This documentation must be provided for initial approval and when requested by GE-A for periodic re-approval of the quality system.This data must be submitted via either email or fax:
AVIATION.AS9100DATA@ge.com
513-786-4335 (limit to 30 pages per transmission)
- G. 2. Nadcap Accreditation
- A. The Nadcap program is administered by the Performance Review Institute (PRI), a division of SAE. PRI may be contacted at https://shop.sae.org/servlets/index?PORTAL_CODE=PRI or <http://www.pri-network.org/>.
 - B. Scheduling of the audit should follow the same timing consideration as the AS9100, AS9120 or ISO9001 9100 audits.
 - C. As all audit results are maintained in the Nadcap database, no data submittal is required.