



ENGINE PRODUCTION QUALITY SPECIFICATION

## SUPPLIER VERIFICATION PROCESS

*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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With each revision the following content is always updated:

Title Page – Updated revision number and date

Record of Revision – Revision changes listed

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SPECIFICATION

1. Purpose

This specification defines requirements for the T58/CT58 engine Supplier Verification Process (SVP) for Columbia Helicopters Inc. (CHI) Suppliers.

2. Applicability

- A. The Supplier Verification Process is required on Production and Class Y parts that include the note on GE-A drawings "Vendor Substantiation Required" or "Vendor Substantiation Required for this Assy and for Certain Components". The applicable Purchase Order (PO) imposes this document and Aviation Specification P1TF17 – *Source Substantiation Administrative Requirements*, Appendix A.
- B. For Aviation drawings that include the note "Vendor Substantiation Required for Certain Components of the Assy", only the component drawings within the assembly that include the "Vendor Substantiation Required" note require Supplier Verification.
- C. The CHI-SQS-02A - *Supplier Verification Plan* form is used for all processing.



**NOTE:**

For suppliers that can show approval of an existing GE-approved VSE or SPS plan, CHI reviews and accepts that plan when possible.

3. Reference Documents

Document Number	Title
CHI SPECIFICATIONS	
CHI-SQS-01	<i>Quality System Requirements for Suppliers</i>
CHI-SQS-02A	<i>Supplier Verification Plan</i>
CHI-SQS-02B	<i>T58/CT58 Special Process Certification</i>
CHI-SQS-02C	<i>Supplier Verification List</i>
CHI-SQS-03	<i>Supplier Requirements for Characteristic Accountability, Verification, and Quality Planning</i>
GE AVIATION SPECIFICATIONS	
P1TF17	<i>Source Substantiation Administrative Requirements</i>

4. Acronyms

Acronym	Full Description
AS	Aerospace Standard
CAGE	Commercial and Government Entity
CHI	Columbia Helicopters, Inc.
CHIQR	Columbia Helicopters Inc. Quality Representative
CID	Change In Design
CMTL	Certified Materials Test Laboratories
CTQ	Critical to Quality
KC	Key Characteristic
LN	Lot Number
M&P	Materials & Processes
MRB	Material Review Board

Acronym	Full Description
PO	Purchase Order
SN	Serial Number
SPS	Significant Process Substantiation
SSP	Source Substantiation Process
SSPCT	Small Sample Process Capability Tool
SVD	Supplier Verification Data
SVL	Supplier Verification List
SVP	Supplier Verification Process
VSE	Vendor Substantiation Engineering

5. Special Instructions

- A. In the event of conflict in CHI quality system requirements, order of precedence must be:
- 1st – Applicable Purchaser's drawing (including specifications referenced on drawing)
  - 2nd – Procurement Document (excluding this document)
  - 3rd – CHI-SQS-01, *Quality System Requirements for Suppliers*
  - 4th – This document
  - 5th – All specifications referenced in this document



**NOTE:**

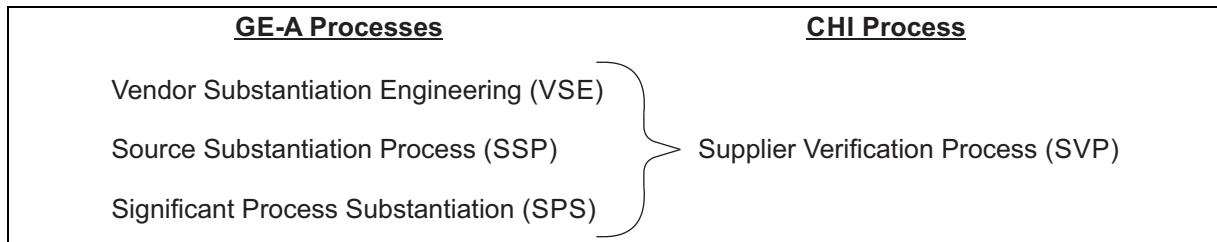
This order of precedence applies to the prime purchase order holder to make sure the PO does not take exception to a drawing requirement for a finished part.

- B. When a supplier substantiated parts is called out on the GE-A drawings as Vendor Substantiation Engineering (VSE), Source Substantiation Process (SSP) or Significant Process Substantiation (SPS), the Supplier must use the CHI Supplier Verification Process (SVP) as stated on the Purchase Order (PO).



**NOTE:**

For all applicable references to GE Aviation Vendor Substantiation Engineering (VSE), Source Substantiation Process (SSP) or Significant Process Substantiation (SPS), refer to this document (CHI-SQS-02 – Supplier Verification Process).



6. SVP Process

- A. Responsibility

(1) SVP Initiation

- (a) For new parts (including source changes), the originator (e.g., Supply Chain, Production Quality, Engineering, etc.) initiates the SVP and notifies the Engineering and/or Materials & Processes (M&P), and the Production Quality function of the SVP creation.

- 1: Suppliers may initiate a SVP for new parts depending on the sourcing and PO processes involved.

- (b) For process change, rework and part number conversion requests, the Supplier originates and notifies CHI Supply Chain and Quality Representative before implementing the change.
  - 1: Changes in Design (CID) must be evaluated by the Supplier for potential impact on significant operations and their sequence to determine if a Process Change SVP is required.
  - 2: Changes of sub-tier sources for a significant operation, where the sub-tier does not manufacture complete the SVP required part, are considered process changes not source changes (e.g., changing heat treat sources).



**NOTE:**

Any draft SVP (Process Change, Rework, Inadvertent) is void after 30 days, if there is no approval by the CHIQR.

- (c) The Production Quality function is responsible for administration of the Supplier Verification Process.
  - (d) The supplier information entered on the SVP, which includes the Commercial and Government Entity (CAGE) code of the supplier, is the source that manufactures the complete SVP required part.
  - (e) For Process Change, Rework and Part Number Conversion-type SVPs, the Production Quality Representative evaluates the information submitted and makes sure it is applicable to the SVP process.
  - (f) Administrative Change SVPs ([Para. 7. Definitions](#)), or changes that do not exceed the approved process limits, do not have to be submitted for approval, but must be documented and maintained on file by the Supplier. The Supplier must make sure that the change meets the definition of Administrative before that type of SVP is selected. The Supplier must provide CHI a list of administrative changes upon request.
  - (g) Sponsored SVPs – If a prime Supplier desires to delegate SVP data preparation and submittal activities to a CHI approved sub-tier Supplier, who manufactures the part complete, this can be accomplished by creating a Sponsored SVP using the approved CHI Supplier Code for the sub-tier.
- (2) Application of Requirements
- (a) The Engineering function establishes the engineering requirements, with input from Materials & Process (M&P) as necessary, and forwards the SVP to the CHIQR.



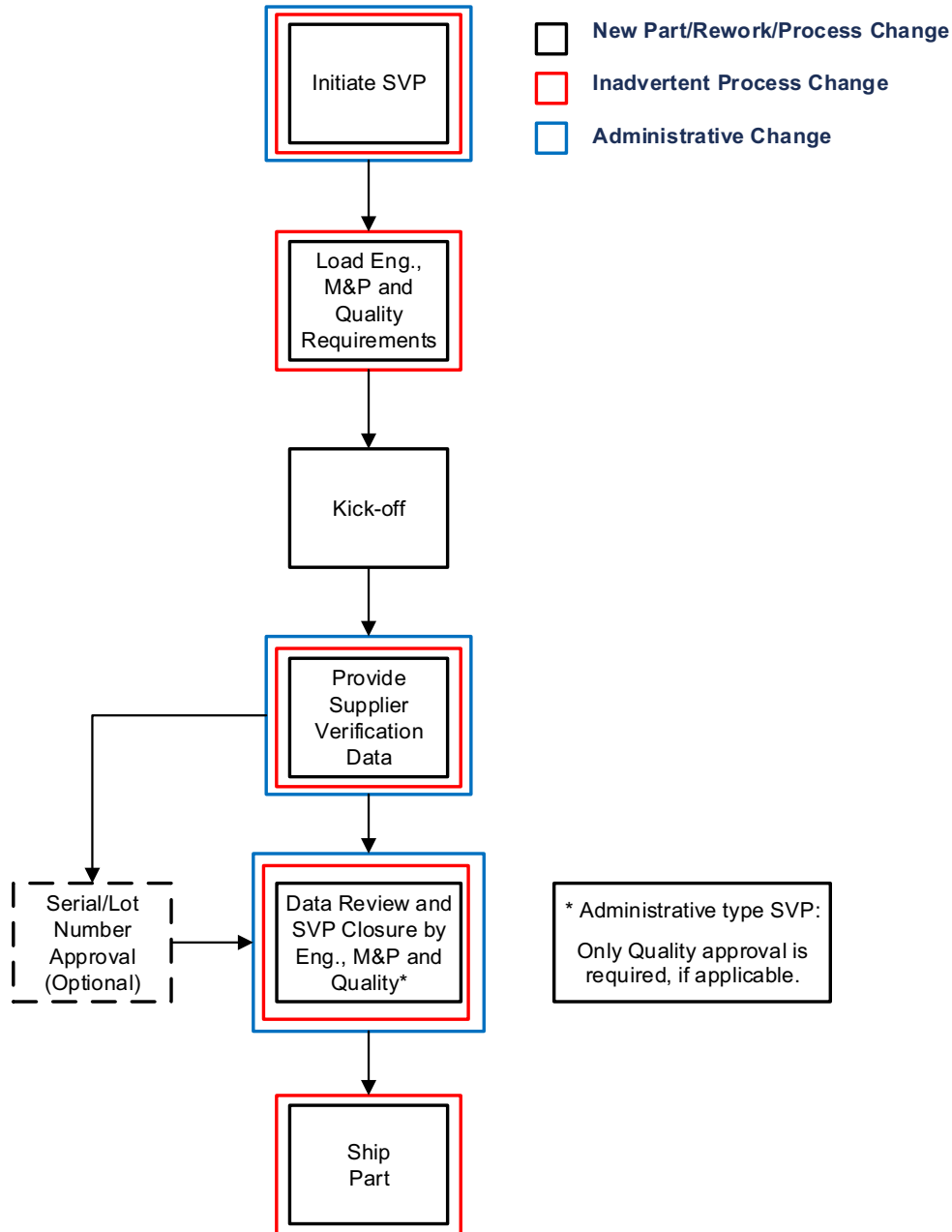
**NOTE:**

If necessary, the Engineering function can recommend to add or eliminate requirements for approval by the Technical Experts. If variable data is necessary for SVP approval, the engineer defines the few key characteristics (KCs), major characteristics or Critical to Quality (CTQ) items and the use of the Small Sample Process Capability Tool (SSPCT), for the Source to comply with. Refer to CHI-SQS-03 for additional guidance.


- (b) The CHIQR establishes the Quality requirements and forwards the SVP to the Supplier.
- (c) For New Parts, Source Changes, and Rework (if there is a part number change), Supply Chain incorporates the SVP requirements on the PO and forwards the SVP to the Supplier.




- (d) For New Part, Source Change, Rework (if there is a part number change) type SVPs, the Production Quality function creates a Quality Plan for the Supplier listed on the PO.
- (e) The engineering function determines if component or equivalent tests are required to make sure that a part manufactured by an alternative source or alternative/changed processes meets the design intent. Development qualification and design assurance tests to verify the design are **not** considered Supplier Verification requirements.



Supplier Verification Process (SVP) Flow Diagram  
Figure 1

- (3) Requirement Acknowledgment
  - (a) In new part (including source changes) and part number conversion SVP types (if there is a part number change and it is the first time the part is manufactured at the source), the Production Quality function makes sure that a collaborative Kick-off takes place within 45 days of initiation of the SVP. Failure to acknowledge within the time frame voids the document.
  - (b) All SVP types require an acknowledgment of requirements.
  - (c) Failure of the CHI Production Quality function to acknowledge within the time frame voids the document.
- (4) Supplier Verification Data (SVD)
  - (a) The Supplier includes objective evidence in the SVD section of the SVP for each of the requirements. The Supplier notifies the CHIQR that the SVP is ready for review, and includes the proposed list and sequence of significant operations.
    -  The significant operations and significant sequence represents the baseline for subsequent SVP changes.
  - NOTE:**
  - (b) The CHIQR or Supply Chain contact includes the proposed list of significant operations and the significant sequence.

**B. SVP Requirements**

- (1) Significant Processes
  - (a) GE Specification P1TF17 identifies the typical processes considered significant, which is a process that, if changed, could have an effect on material structure, mechanical, chemical or electrical properties, and cannot normally be evaluated without destructive testing, and could have an effect on design intent.
  - (b) The PO specifies requirements such as processing documentation, inspection reports, lists, or other information necessary for evaluation by CHI before full Supplier Verification approval is granted.
  - (c) All data requested for submittal to CHI for the review and approval process must be transmitted electronically, unless the CHIQR approves specific alternative arrangements.
  - (d) Initial documented Supplier Verification approval by part number, is granted by CHI on the SVP. This approval is a separate and distinct approval, not to be confused with a special process certification, refer to form CHI-SQS-02B. When a significant operation is performed that involves a Special Process, Supplier Verification approval for the specific drawing application and Special Process certification are required.
  - (e) An SVP is initiated to obtain prior approval from CHI for changes to significant processes, significant process sequence, and sub-tier sources of significant processes. Approval is indicated on the SVP.
    -  Changes made for clarification (e.g., clerical, administrative, addition of a sketch/note, etc.) or changes that do not exceed the approved process limits, do not require submittal to CHI, but are maintained on file by the Supplier for review.
- (2) Supplier Designed Components
  - (a) The Supplier prepares and maintains a Supplier Verification List (SVL) of Supplier-designed components that require CHI approval. The SVL is submitted before manufacture of a component or item, unless otherwise specified by the

PO. The SVL, when approved by CHI, permits the Supplier to operate within its scope by defining the components and processes that require approval of CHI before any change.



Form CHI-SQS-02C can be used for documenting the SVL and is available upon request.

**NOTE:**

- (b) CHI determines the acceptability of a SVL that is issued for initial approval or for subsequent significant change approval(s) and notifies the Supplier on a SVP. The Supplier must include the following additional data:
    - 1: List each detail part contained in the component parts list.
    - 2: For each of these details, list all processes contained in, or similar to, those in P1TF17, Appendix A, and recommendations whether each is significant or not.
    - 3: Include drawings for each of the details listed in 1: and 2:.
    - 4: Include all process sheets and/or specifications for the processes listed in 2:.
  - (c) After initial CHI approval is granted on the SVP, the Supplier must obtain CHI approval of all subsequent changes in significant processes, significant process sequence, or sub-tier suppliers contained in the SVL. The approval of CHI must be received before implementation of changes.
  - (d) Request for approval of changes is made by the Supplier who initiates an SVP.
  - (e) The Supplier is permitted to incorporate non-significant changes in processes or in sub-tier suppliers not contained in the SVL, or portions of processes in the SVL not identified as significant, or when the change meets the definition of an administrative change without approval from CHI, provided it does not change from a non-significant to a significant process.
  - (f) The Supplier may submit a SVP request for Supplier significant process change approval when the same significant process is used on multiple part numbers, as specified in the following criteria:
    - 1: The significant process has identical parameters for all parts under consideration.
    - 2: The parts under consideration are processed on the same equipment.
    - 3: The parts under consideration are processed to the same process procedure.
    - 4: Verification testing performed on part that is representative of all parts affected (i.e., geometry, material, mass).
    - 5: A list of all the applicable CHI part numbers that undergo the process must be attached to the SVP to provide traceability from the process to all affected part numbers.
- (3) GE Aviation Designed Components
- (a) The Supplier provides Supplier Verification data and documentation as required by the PO. Usually this includes routing sheets with significant operations and services identified, and process sheets for each operation identified as significant. Additional dimensional and/or laboratory test results may also be required.

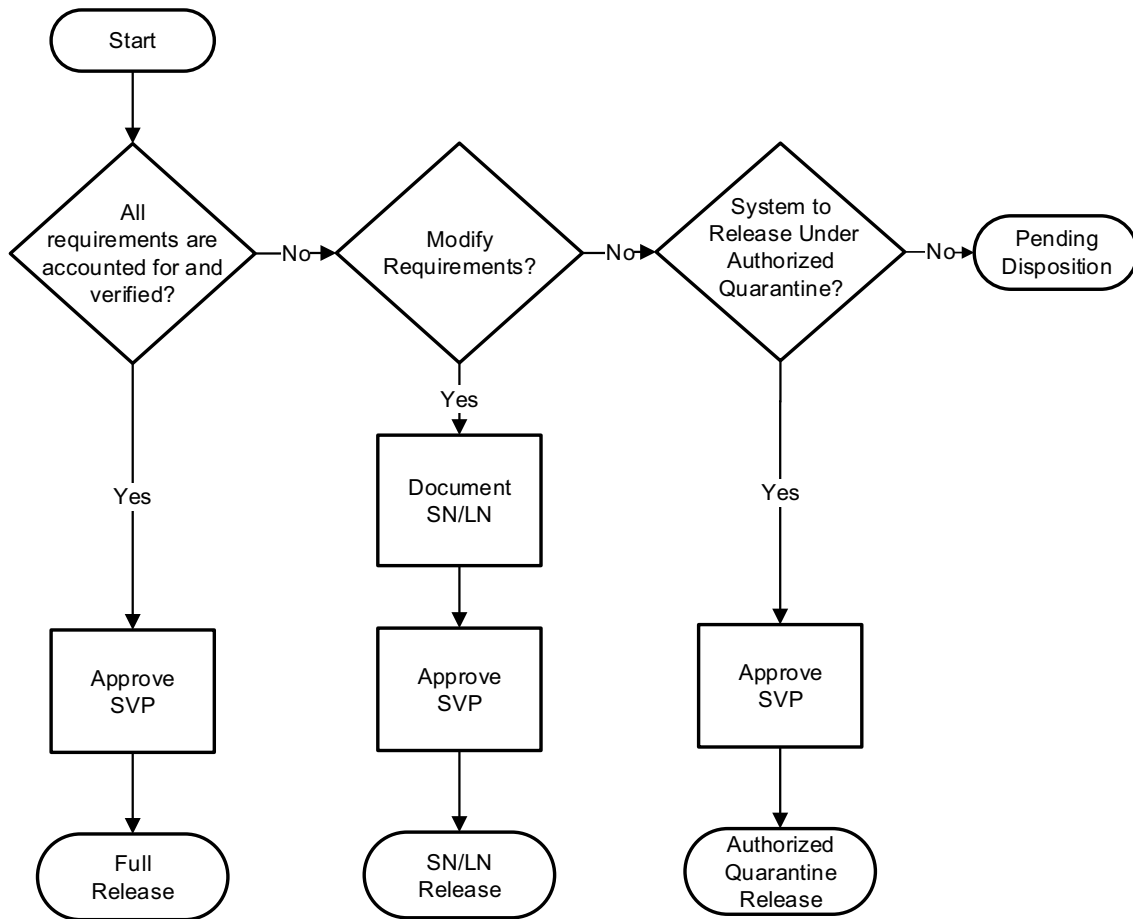
- (b) After CHI approval is granted on the initial SVP, the Supplier obtains the approval of CHI for all subsequent changes in significant processes, significant process sequences, or sub-tier suppliers listed on the SVP. The approval of CHI must be received before implementation of changes. Request for approval of changes are made by the Supplier who initiates the SVP. CHI approval of the requested changes is returned on the SVP.
- (4) Supplier Verification Records
  - (a) CHI approvals on the SVP and copies of all other required SV data and documentation (such as routers, process sheets, dimensional, and laboratory results, etc.) are maintained as part of the product acceptance record requirements of CHI-SQS-01. The Quality function of the Supplier maintains these records under their control, or specifically delegate this responsibility, to make sure of retrieval when necessary.
- (5) Raw Material Testing
  - (a) Raw material testing of Supplier verified product is performed as specified in the requirements of CHI-SQS-01 – *Quality System Requirements for Suppliers* and any additional requirements that may be specified by CHI on the SVP.
  - (b) Certified Laboratory Testing Applicability for Supplier Verification required product.
  - (c) The following items do not require testing at CHI approved laboratories, and includes any other exceptions defined on the SVP.
    - 1: Processing materials or consumables, such as tungsten electrodes, brazing flux, stop-off material, grit blast and shot peen media, solvents for cleaning, inert gases (used for heat treatment, brazing, and welding), chemical processing solutions (i.e. acid activation, etching, anodizing, plating, conversion coating, stripping, and cleaning solutions), and are not considered raw material.
    - 2: Dry Film Lubricants
    - 3: Paints
    - 4: Primers, excluding primers used for adhesive bonding
    - 5: Residue from cleaning, inspection processes, or masking materials
    - 6: Composite material tracer yarn, hot melt resin for tacking, and non-structural foam
- (6) Certification of Special Processes
  - (a) When certification or qualification of equipment, processes, operators, or inspectors is required by specification (or other referenced documents), the Supplier must make sure that certification is complete and documented for both in-house and sub-tier sources.
  - (b) Special Processes are to be certified when used on SVP required parts or components. CHI designates each Special Process as Category I Processor or Category II Processor for each Supplier. Category I indicates that the Supplier is authorized to approve other sources of that Category I Special Process. Approval as a sub-tier supplier to a Category I supplier does not infer approval to accept CHI work from CHI or from other CHI Suppliers. Acceptance of such work requires additional approvals. Any Supplier that has been designated as Category I cannot extend Category I status to any other source.

- (c) For Supplier designed items, certification of Special Processes is required for:
  - 1: Special Processes listed on the Supplier Verification Listing (SVL).
  - 2: Non-destructive testing processes listed on the SVL.
  - 3: Metallic and/or non-metallic material testing laboratories, when the material specification is listed on the SVL.
- (7) CHI documents categorization and specific approvals for a Supplier of Special Processes. Categorization is subject to change depending on the degree of compliance when compared to the assessment criteria of CHI.
  - (a) Supplier corporate entities, that are granted Category I status for Special Processes, may extend the use of their approved Special Process Source(s) to any of their own corporate subsidiaries. The following minimum requirements apply:
    - 1: The corporate entity is responsible for the correct identification and technical control of the Special Process Sources used by their subsidiaries.
    - 2: The corporate entity maintains and provides a current listing of their approved Special Process Sources to their respective subsidiaries.
    - 3: The subsidiaries must identify the approved Special Process Source(s) selected for use on the manufacturing or quality planning.
    - 4: The subsidiaries must define the methods of control in the subsidiary quality manual, procedure, or work instruction that relates to Special Processes, requirements, responsibilities, etc.
  - (b) For Special Processes on Supplier Verification required items, and when CHI has granted a Supplier Category II status for a Special Process(es), the following requirements apply:
    - 1: The Supplier uses the Special Process Sources certified by CHI. A list of certified Sources of Special Processes is maintained and sent via electronic correspondence from the CHI Representative.
    - 2: Requests for certification of a new Special Process Source may be proposed to CHI, subject to review and approval by CHI before use.
    - 3: The certification of sources by CHI makes sure of potential capability of the Suppliers, but does not guarantee continued satisfactory performance. CHI certification also does not constitute Supplier Verification approval. The Supplier has responsibility for their purchased services and materials.
    - 4: For Supplier designed items, the Supplier must use CHI-approved Supplier for processes identified on the SVL.
    - 5: Suppliers must maintain a list of Special Process Suppliers used, and make sure those Suppliers are certified by CHI before use.
    - 6: Suppliers seeking certification by CHI for these Special Processes are required to obtain Nadcap accreditation in advance of a CHI initial audit. Ongoing surveillance is required through Nadcap. CHI reserves the right to waive this requirement in part or in whole, at its sole discretion
  - (c) For Special Processes on Supplier Verified hardware, *GE Certified Materials Test Laboratories (CMTL): Metallic Materials* and *GE Certified Materials Test Laboratories (CMTL): Non-metallic Materials*, certified laboratories are required, except for coatings.

- (8) Significant Operation/Sequence Changes
  - (a) A Process Change SVP must be created the first time a rework procedure is used, even if the change is temporary, if:
    - 1: The rework procedure does not include an approved Material Review Board (MRB) repair method.
    - 2: The significant operation(s) in the rework procedure are outside the SVP approved process limits.
    - 3: The rework procedure uses the same approved SVP process, but is subsequently used on material in a different starting condition.
    - 4: The rework could have an effect on the drawing, specification process, or property requirements based on the number of times the rework procedure is used (i.e., accumulated time at temperature).
  - (b) All rework must be performed as specified in CHI-SQS-01, Appendix C.
  - (c) Occasionally, an unintentional or inadvertent change in a sequence/process may have an effect on a limited number of parts. These parts must be documented on an Inadvertent SVP linked to an existing approved process for SVP. The request must include serial numbers or lot numbers, if applicable, per drawing requirements. The impacted parts are restricted from shipping until the SVP is closed. If the sequence/process change results in a drawing non-conformance, then the parts must be referred to MRB for disposition and a SVP is not required.

**C. Process for Closing the SVP**

- (1) Quality/Engineering/Material & Process Review and Closure
  - (a) The CHIQR reviews the SVP package for accuracy and completeness, resolves Supplier issues as necessary and, if the data is acceptable, signs and dates the closure of the SVP for Production Quality. The Production Quality function notifies the Engineering and/or Material & Process (M&P) function that the SVP is ready for review.
  - (b) The CHI Engineering function, in conjunction with the M&P as necessary, reviews the SVP and, if acceptable, signs and dates the closure section of the SVP.
  - (c) Full SVP approval of the production process must be complete before shipment of SVP required items to CHI, except as noted in [Para 6.C.\(2\)](#).
  - (d) The CHIQR updates the database for the Supplier listed on the PO.
  - (e) CHI Supply Chain, notifies the Supplier of SVP closure before shipment of the parts from the Supplier.
- (2) Approval by Serial/Lot Number
  - (a) Approval of selected Serial or Lot numbered parts (herein referred to as Serial Number or SN, and Lot Number or LN) may be used after all SVP requirements are complete and when it is in the best interest to delay full Supplier Verification approval while the manufacturing process is being developed and evaluated by the CHI Engineering and Production Quality functions. The Engineering function may modify the initial SVP requirements to accept selected parts by SN/LN, for use without restrictions, provided the modifications are documented in the SVP for the affected SN/LNs. Refer to [Figure 2](#) for the Serial/Lot Number Approval Process Flow Diagram.



Serial/Lot Number Approval Process Flow Diagram  
Figure 2

- (b) CHI determines when the SN/LN process may be used and the Supplier must have a system to prevent shipping unapproved parts or groups.
- (c) Approval by SN/LN must not compromise hardware integrity, quality, or the ability to meet design requirements or intent. Parts approved by SN/LN must be acceptable for use without restrictions.
- (d) If at the desired time of part shipment, all Engineering and Quality requirements on the SVP are not complete by the Supplier, and the Engineering function determines that the initial SVP requirements can not be modified for the selected parts, then the selected parts may be Quarantine Released from the Supplier with prior authorization from the CHIQR. The SN/LN release process is not used to Quarantine Release the selected parts, although the Engineering and Production Quality functions may later authorize use of the SN/LN release process, if required.
- (e) The rationale for using the SN release process is documented in the SVP.
- (f) For parts that are not serial or lot numbered, temporary numbers must be assigned and marked on the parts (or tag, if size dictates), to assure release of approved parts only. The temporary traceability marking to be applied to the parts or package tag must be specified on the SVP SN/LN section.

- (g) Engineering may approve and close a SVP for only the SNs listed in the SVP. A separate SVP is required if a production process is developed at a later time.
  - (h) The Engineering function may grant Full Approval when the Supplier has presented documented evidence that the process has developed and satisfactorily meets all the SVP requirements.
- (3) Re-Qualification of SVP Parts
- (a) If a SVP part was not in production during any 36 consecutive months after initial SVP approval at a Source, there is not an automatic requirement to do a new SVP document. The following process must be followed:
    - 1: The Source notifies the CHIQR before restarting production, to determine if and to what extent additional qualification and/or testing may be required.
    - 2: The CHIQR must consider any changes to the facility of the Source, process, personnel, and any drawing changes during the period of inactivity as potential factors to determine if a new SVP is required.
    - 3: Drawing and specification characteristic data results, if required by the SVP, must be included in the SVP.

7. Definitions

**ADMINISTRATIVE CHANGE** – A change to a process document that is clerical in nature and does not change the chemical, electrical, physical properties, or performance of the component or any of its parts or materials. The following are examples of changes to significant processes/ sequences that are not considered significant.

- A change made for clarification only (i.e., clerical or the addition of a sketch or note).
- A change to a process requirement/parameter that stays within the currently approved SV process limits.

**APPROVAL BY SERIAL/LOT NUMBER** – The Supplier Verification approval of specific serial/lot numbers that initially satisfies all engineering and quality Supplier Verification Standard Requirements, but which requires further development of significant processes.

**APPROVED SOURCE** – A source whose part has satisfactorily met the applicable Supplier Verification Standard Requirements (SVP) and is approved by CHI Engineering or their delegate.

**CATEGORY I PROCESSOR** – Suppliers of Special Processes who have the resources, such as, approved technical personnel, record keeping procedures, incoming inspection criteria of purchased services or products, and overall assurance plans for adequate appraisal of quality. If these criteria are met, the Supplier may be classified Category I (qualified to conduct certification of Special Processes, both in-house and/or purchased). This process specific classification requires certification by CHI.

**CATEGORY II PROCESSOR** – Suppliers of Special Processes who do NOT have the resources necessary to qualify as Category I, are classified Category II. This classification requires the Supplier to use sources certified by CHI.

**CERTIFIED** – The initial and periodic qualifications of Suppliers who are 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.

**CERTIFYING AGENT** – A group of CHI special process experts with authority to approve technical plans and repair procedures.

**CHANGE IN DESIGN (CID)** – A controlled document issued by CHI to change an engineering drawing or specification.



**CLASS Y PARTS** – Engineering parts that meet their engineering drawing/specification requirements and are fully capable, without additional requirements, of being used for FAA Certification. Class Y parts are manufactured as specified in all applicable production part requirements, which includes Supplier Verification (SV), and are subject to the following additional requirements: all nonconforming hardware (MRB or minor deviations) must be evaluated by the component design engineer and be usable on all possible certification tests as defined in Title 14 CFR Part 33. The design engineer prepares a justification statement and submits the nonconformance to the FAA-DER for concurrence.

- MRB evaluations, justifications, and approvals are processed through the CHI internal system and Suppliers then receive notification of the outcome.
- Minor Deviations are to be processed through the Minor Deviation process outlined in CHI-SQS-01.
- For development assembly purposes, used Class Y hardware must be evaluated as specified in the requirements of the established Shop Manuals or After-Run Standards (ARS).

In lieu of any of the preceding, the part must be evaluated based on the drawing and any applicable specifications.

**COMPONENT** – An item of equipment furnished as part of the engine that is required for engine operation, such as fuel pump, engine control, actuator, valve, sensing device, ignition exciter, wiring harness, wheel, blade, or casing.

**DELEGATION AUTHORITY** – As appropriate, establishment and approval authority of Engineering or Quality requirements, may be delegated through documentation by the function where that authority is vested.

**DEVELOPMENT QUALIFICATION TESTS** – Component, system, and engine tests performed to demonstrate the suitability of a component for flight-testing and production.

**DESIGN INTENT** – The conception of the responsible engineer of the intended use of an item and its ability to meet all performance and life requirements in its operational environment. The engineering definition of which is communicated via an engineering drawing or specification.

**EQUIVALENCY/SIMILARITY TESTS** – Tests conducted to make sure that a component manufactured by an alternative source, or that uses alternative/changed processing, performs without detriment. The parts produced by such an alternative source/process do not have to be equal in all respects, but must fully satisfy all physical and functional engineering requirements, as defined by the Supplier Verification requirements, engineering drawing, and applicable specifications.

**ENGINEERING FUNCTION** – The function (i.e., Design, Materials Applications, Standards, Systems, etc.) responsible for establishing engineering requirements in the SVP and responsible for establishing and evaluating existing standard requirements to make sure they are still applicable for the part in SVP. The Engineering function is also responsible for reviewing and approving the Supplier Verification Plan and the related data package.

**ENGINEERING SUPPLIER VERIFICATION REQUIREMENTS** – The engineering requirements over and above the requirements, as defined by the Engineering drawing and the specifications applicable to SVP.

**INADVERTENT** – An unintentional change in sequence/process, over/under currently approved process limits, that have an effect on a limited number of parts. Examples: A specific lot of parts that exceeded temperature or time limits during heat treat, or power was lost during the heat treat process.

**KICK-OFF** – Collaborative meeting between the Source contact, Sourcing (optional), Quality, Design and/or Materials Engineer to facilitate understanding of standard requirements.

**MANUFACTURING ROUTING (FROZEN PLANNING)** – A sequential listing of the operations/processes necessary to manufacture the part. (Example: router, dispatch order, traveler, etc.)

NADCAP – A consortium of prime aerospace Original Equipment Manufacturers that control and accept special audits performed by a third party.



Currently, Performance Review Institute administers this program.

**NOTE:**

**NEW PART** – A part that requires SVP, but does not appear on the Supplier Verification Master List (SVML). (Example: the initial issue of part drawing or CID to a drawing that adds a new part number or group number (i.e., the first time the PN and Source Combination is created). This also includes changes in manufacturing sources for a complete part (Source Change).

**NON-SIGNIFICANT CHANGES** – The Supplier is permitted to incorporate changes in processes or portions of processes in the SVL not identified as significant, or when the change meets the definition of an administrative change without approval, provided it does not change from a non-significant to a significant process.

**ORIGINATOR** – The individual who initiates a Supplier Verification Plan for a new part, alternative source, or process change.

**PART NUMBER CONVERSION** – Processing to convert a part or assembly from one P(art) or G(roup) number to another, or from one drawing number to another. These changes can be the result of a manufacturing decision or may be required by an approved change document (CID, DCID, etc.) or rework drawing (Shop Mod, etc.). The organization that does the part number conversion must be the original manufacturer.

**PRIORITY PART** – A high-energy rotating part, a high-pressure casing, or a single-element mount structure in an approved GE 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.

**PROCESS** – An action or operation performed on a component/part. This term is intended to be comprehensive and includes, but is not limited to, assembling, machining, drawing, casting, plating, heat treating, cleaning, forging, molding, powder making, hot isostatic pressing, and coil winding.

**PRODUCTION QUALITY FUNCTION** – The function responsible for establishing quality requirements in the SVP and responsible for establishing and evaluating existing standard remarks to make sure they are still applicable for the part in SVP. The Production Quality function is also responsible for reviewing and approving the Supplier Verification Plan and the related data package. The Production Quality function is also responsible for the administration of the SVP process.

**PURCHASE ORDER (PO)** – The formal legal contract between CHI and the Supplier that covers the purchase of materials and services.

**RAW MATERIAL** – Metallic or non-metallic material in its basic form (i.e., sheet, bar, wire, powder, resins, fibers, adhesives, plastics, elastomers, honeycomb, etc.), which includes castings and forgings used to manufacture CHI products and that remains present in whole, or in part, in the finished product.

**REWORK** – A procedure applied to a nonconformance that completely eliminates it and results in a characteristic that conforms completely to engineering requirements (i.e., drawings, specifications, etc.).

**SIGNIFICANT PROCESS** – A process or process sequence that, if changed, could have an effect on design intent, material structure, mechanical, chemical or electrical properties, and cannot normally be evaluated without destructive testing.



If only certain portions of such a process are considered significant, those portions may be identified instead of the entire process.

**NOTE:**

**SIGNIFICANT PROCESS CHANGE** – A change to a process previously identified as significant, a change from a non-significant process to a potentially significant process, addition of a significant operation, or a change in the location (i.e., equipment or facility) at which a significant process is performed on any component. Temporary changes are included.

**SIGNIFICANT PROCESS SUBSTANTIATION (SPS)** – Refer to Supplier Verification.

**SIGNIFICANT SEQUENCE CHANGE** – A change in the sequence that involves a significant process and/or any change in the sequence of Non-Destructive Evaluation, or testing with relation to the significant process.

**SOURCE CHANGE** – A change in manufacturing source or the addition of an alternative manufacturing source for a complete part.



Change in a sub-tier source for a significant process or from one building to another within the same supplier or CHI location is a “process change” not a “source change”.

**NOTE:**

**SPECIAL PROCESSES** – Those processes that modify or change the inherent physical, chemical, electrical, or metallurgical properties of an item, or non-conventional methods that remove or deposit material on an item during or after fabrication, which cannot be fully evaluated by non-destructive means or those used to maintain process control, such as nondestructive testing.

**SUPPLIER** – Sources (including distributors, warehouses, processors, and revenue share participants) other than CHI, that supplies material, parts, processes, or services for incorporation into CHI products. May also be referred to as the “Source”.

**SUPPLIER VERIFICATION (SV)** – The engineering requirement to make sure that a component manufactured to a specific process and drawing requirement meets the design intent and that parts produced by an alternative source/process must be equivalent to the part originally qualified. The parts produced by the alternative source/process need not be equal in all respects, but must fully satisfy all physical and functional engineering requirements, as specified in the Supplier Verification requirements, engineering drawing, and applicable specifications. Also referred to as Vendor Substantiation Engineering (VSE) or Significant Process Substantiation (SSP).

**SUPPLIER VERIFICATION DATA (SVD)** – Documentation and data used by engineering and quality to evaluate if a part provided by a source meets design intent.

**SUPPLIER VERIFICATION LISTING (SVL)** – A list used for Supplier Designed Components that provides significant processes, procedures, substantiation testing, and the approved source for each significant process identified (refer to P1TF17), can be recorded on form CHI-SQS-02C.

**SUPPLIER VERIFICATION PLAN (SVP)** – The engineering and quality requirements and approvals entered on the CHI-SQS-02A form.

**TECHNICAL EXPERTS** – Group of expert(s) that evaluate the need to add or remove requirements. (applicable for SVP).

**VARIABLE DATA** – Variable data is Quantitative. There are two types (Discrete) count data and (Continuous) data.

Attribute data is always binary and unusable for the purpose of quantification. Good Bad, Yes No—once it is converted to discrete data by counting the number of good or bad—it becomes discrete variables data

**VENDOR SUBSTANTIATION ENGINEERING (VSE)** – Refer to the definition provided for SUPPLIER VERIFICATION.