



Pratt & Whitney

A United Technologies Company
Space Propulsion
Chemical Systems Division

Quality Assurance Requirements

For

Pratt & Whitney/Space Propulsion,

Chemical Systems Division



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SUMMARY OF MODIFICATIONS FOR REVISION 3

<u>Clause</u>	<u>Modification</u>
6	Clause Rewritten
7	Added New Clause
10.1	Clause Rewritten
10.2	Clause Rewritten
10.3	Clause Rewritten
10.4	Deleted
10.5	Was 10.4
11.2	Added New Clause
11.3	Added New Clause
19	Added Sentences
20	Added Sentence
21	Added Sentences
22	Added and Revised Sentences
22.1	Added Sentences
25	Added Sentence
26	Modified Clause
27	Modified Clause
30	Modified Clause
31	Added Sentence
33	Modified Clause
35.2	Modified Clause
36	Modified Clause
36.1	Modified Clause
40	Added Clause

SUMMARY OF MODIFICATIONS FOR REVISION 4

Reformatted only, no other changes.



SUMMARY OF MODIFICATIONS FOR REVISION 5

11.1	Added Paragraph Number
11.2	Added Paragraph Number
11.3	Added Paragraph Number
14.2	Modified Clause
14.3 & 14.4	Combined Paragraphs
19	Added a Note
22.1	Added New Paragraph
24	Modified Clause
40	Added Text to Clause

SUMMARY OF MODIFICATIONS FOR REVISION 6

10.4	Added New Clause
20	Added Note to Title
35	Corrected Word
40	Added new sentence



SECTION I – QUALITY SYSTEMS REQUIREMENTS

1. Quality Assurance Program

The Sellers Quality Assurance Program shall conform to the requirements of MIL-Q-9858A. Registration of the Sellers quality system as conforming to ISO9001 or ANSI/ASQC Q9001 is accepted as equivalent.

2. Quality Control Plan

Prior to fabrication, the Seller shall provide a quality control plan to P&W/SP for approval. The plan shall include, as a minimum, a flow chart depicting sequential points for the article(s) procured and a narrative description of each of the sequential manufacturing points. Sufficient detail shall be included to provide an understanding of the occurring events. All inspection, test and acceptance points shown shall explicitly describe: features being examined, special tooling used, nature of documentation generated, use of certified personnel, processes, interchangeability demonstrations, et cetera. All P&W/SP quality requirements identified in the purchase order must be explicitly addressed by the Seller with a clear description of how each requirement will be implemented. The plan shall also include the nature of the documentation received and generated at each point shown, and the objective evidence records that will be maintained to demonstrate the integrity of the item(s) being fabricated.

3. Inspection

- 3.1 The Seller shall maintain an inspection system that meets the requirements of MIL-I-45208A. Registration of the Sellers quality system as conforming to ISO9002 or ANSI/ASQC Q9002 is accepted as equivalent.
- 3.2 The Seller shall maintain an inspection system that meets the requirements of NHB 5300.4 (1c) "Inspection System Provisions for Aeronautical and Space Systems Materials, Parts, Components and Services."
- 3.3 The Seller shall be an approved vendor and shall maintain a quality control system that ensures the quality of deliverable items on the contract.
- 3.4 The dealer or distributor shall maintain a system that prevents deterioration of product quality. Traceability between the product and the manufacturer shall ensure control of manufacturer's certification, shelf life as required, and packaging.

4. Quality Control Plan

Prior to fabrication, a quality control plan that describes the Sellers system for controlling the quality of the parts and materials shall be provided. This plan shall be reviewed and approved by P&W/SP Supplier Quality prior to start of production.

5. Calibration Requirements

The Seller shall have and maintain a calibration program that meets the requirements of MIL-STD-45662A. Registration of the Sellers calibration system is conforming to ISO10012-1 or ANSI/NCSS Z540-1 is accepted as equivalent.

6. Certified Supplier

The Seller shall be recognized as a P&W/SP Certified Supplier. The Seller shall perform and comply to the purchase order requirements with the addition of form 06.12.06.01, "Release of Parts From Certified Suppliers."

7. Production Readiness Review

A Production Readiness Review (PRR) shall take place to document and capture the issues, actions and approvals of the quality control plan. See the sample PRR agenda in Appendix A.

8. Deleted

9. Deleted

10. Seller Responsibilities

10.1 Change Control/Notification

The Seller shall be responsible for:

- a. Controlling changes to parts or components manufactured to P&W/SP's drawings and specifications to ensure that the end product meets specified configuration requirements. Only P&W/SP is authorized to make changes to P&W/SP drawings and specifications.
- b. Maintaining a system to control processes used to fulfill the requirements of this purchase order, both at its facilities and that of its sub-tier suppliers. The Seller shall notify P&W/SP prior to any changes to their or their sub-tier designs (including proprietary designs), parts/components, materials, fabrication methods, processes *, tooling and equipment or methods used in testing and acceptance of products delivered to P&W/SP.



* **Note:** If the process performed by the Seller or its subtier suppliers is identified as a Critical and/or Special Process then it shall be controlled by the Seller in accordance with Quality Clause 11. The Seller shall obtain P&W/SP's written approval prior to any changes to such process.

- c. Notifying, within one working day, P&W/SP of any recall notices for any product, raw material and/or components procured by P&W/SP. The Seller is responsible to notify P&W/SP of all such recall notices from wholesalers, manufacturers, and subvendors.
- d. In the event that P&W/SP shall notify the Seller of a GIDEP ALERT or other recall notice, the Seller shall inform P&W/SP within ten (10) working days whether the notice applied to the fabrication of this product under this purchase order by the Seller and/or any subtier supplier.
- e. The Seller shall include, as part of the documentation package submitted with all goods and services provided to the Buyer, a certification signed by an authorized representative of the Seller that states the following: "Seller hereby certified that all Supplier Quality Requirements in Clause 10 (form 06.13.02.02) that are specified as applicable in the purchase have been fully documented and properly executed by the Seller prior to rendering to the Buyer the goods or services associated with this certification."

10.2 Control/Written Approval

The Seller shall comply with all of the requirements specified in paragraph 10.1 above except that the Seller is required to obtain P&W/SP's written prior approval to any changes.

10.3 Facility Changes

The Seller shall notify P&W/SP prior to any changes to the Sellers facility, point of manufacture, labor disputes, or prolonged shutdown (defined as ninety (90) calendar days or more) of normal manufacturing operations or changes in name or ownership. Such events may negate all previous qualifications, certification, and approval status.

10.4 Written Authorization to Subcontract Work

The Seller shall notify P&W/SP and receive P&W/SP's written approval prior to subcontract in excess of 40%, excluding cost of material, of the cost to produce any given line item of this purchase order, RFP or RFQ.

10.5 QPL/QML

The item and its manufacturer must be listed on the Qualified Products List and/or Qualified Materials List for the applicable Government specification.

SECTION II – NONDESTRUCTIVE TESTING/SPECIAL PROCESSES REQUIREMENTS

11. Nondestructive Testing/Special Processes

Direct Sellers of Nondestructive Testing (NDT) and/or Special Processes (SP) to P&W/SP must be in possession of a current letter of approval from P&W/SP for that particular NDT and/or SP being performed.

Nondestructive Testing includes Magnetic Particle, Liquid Penetrant, Eddy Current, Ultrasonic, Radiography, Acoustic Emission and Holography. Special Processes include Heat Treatment, Mechanical Testing, Chemical Films, Welding, Soldering, Environmental Acceptance Tests and Plating. When the Sellers quality systems conform to MIL-Q-9858A or ISO9001 or ANSI/ASQC Q9001 as approved by P&W/SP, the Seller shall be responsible for controlling their sellers of NDT and/or SP. When Sellers quality systems conform to MIL-I-45208A or ISO9002 or ANSI/ASQC C9002 as approved by P&W/SP, the seller shall use only P&W/SP approved Sellers.

Seller's request for P&W/SP approval of their NDT or SP and/or their subtier vendors for NDT or SP, shall be submitted in writing to P&W/SP's purchasing representative. The Seller shall submit such request to P&W/SP as soon as the Seller identifies the processes and the subtier Sellers to be utilized on product delivered in accordance with purchase order. The request shall include two copies of all NDT procedures for P&W/SP review and approval. NDT or SP vendors will be required to update their "approval" status to P&W/SP yearly following initial approval. Failure to provide this yearly update will be cause for removal from the P&W/SP Approved Vendors List. Failure to submit revised or updated NDT procedures will also be cause for removal from the P&W/SP Approved Vendor List.

Seller's failure to be approved by P&W/SP for NDT or SP process may be cause for rejection of products or service provided P&W/SP, in accordance with P.O. Terms and Conditions.

NDT procedure Scope, content and detail shall be in compliance with the applicable specification. At P&W/SP Supplier Quality discretion, the procedures may be tailored for specific part applications and require detailed technique sheets. No deviation from NDT procedures or techniques approved by P&W/SP Supplier Quality shall be allowed without prior written P&W/SP Supplier Quality concurrence.

- 11.1 The Seller shall submit to P&W/SP Supplier Quality the specific Nondestructive Test procedure for the process to be performed. This procedure must be approved by P&W/SP prior to use.



- 11.2 The Seller shall submit to P&W/SP Supplier Quality the specific Welding procedure for the parts to be welded. This procedure must be approved by P&W/SP prior to use. Failure to comply with this requirement may be cause for rejection.
- 11.3 Critical Processes. Critical processes shall be identified on the Purchase Order. All applicable quality requirements for the processes from this document shall be controlled and maintained by the Seller.

12. Deleted

13. Deleted

SECTION III – INSPECTION REQUIREMENTS

14. Source Inspection

Source Inspection shipment of items shall not be made without source release by P&W/SP's Quality Assurance. P&W/SP's Quality Assurance representative shall be notified a minimum of forty-eight (48) hours for in-state Sellers, or seven (7) business days for out-of-state Sellers prior to the items being ready for Source inspection. Request for source release shall be made to P&W/SP Supplier Quality at the telephone number noted in the Purchase Order. After issuance of the Purchase Order, a copy of P&W/SP's Inspection Plan (IP) will be provided to the Seller by Supplier Quality. This IP is furnished as notification of P&W/SP's minimum Inspection Requirements. The Seller is to maintain the IP on file and furnish a copy for the P&W/SP Quality Assurance Representative's use during each of their inspection visits.

- 14.1 P&W/SP Source Representative shall witness the actual inspection of the product.
- 14.2 P&W/SP Source Representative shall witness the Acceptance, Pressure/Hydrostatic or Proofing testing or Proof testing, as required by the drawing, specification, purchase order, Statement of Work, et cetera.
- 14.3 P&W/SP Source Representative shall perform source release on the first batch or shipment of parts produced for this purchase order. Source release will consist of a review of the technical data package and/or first article inspection report. P&W/SP Source Representative shall perform acceptance by completing a "Source Acceptance Tag".

15. Inspection Plan

The Seller shall submit an inspection plan for P&W/SOP Supplier Quality review and written approval prior to start of fabrication. This plan shall identify all inspection, test and acceptance points and all P&W/SP quality requirements flowed down to the seller for all features on drawings and specifications, indicating where they occur in the manufacturing sequence, and any special tooling utilized.

After review of this plan, P&W/SP may designate, in writing, certain operations as mandatory P&W/SP Quality Surveillance points. The Seller shall make provisions to include the P&W/SP Quality Assurance mandatory requirements at the appropriate place in the inspection plan.

16. Government Inspection

Government inspection is required prior to shipment from your plant. Upon receipt of this order, promptly notify and furnish a copy to the Government representative normally servicing your plant so that Government inspection can be appropriately planned. If a Government representative does not service your plant, contact the nearest Army, Navy, Air Force, or Defense Supply Agency inspection office. In the event the representative or office cannot be located, P&W/SP's Materiel Manager should be notified immediately.

17. Deleted

18. Deleted

19. First Article Inspection Record

The Seller is required to perform a First Article Inspection. The inspection record shall identify each characteristic, the allowable tolerance limits, and the actual dimension recorded. The complete record of this First Article Inspection must accompany the first parts shipment. NOTE: The First Article Inspection unit shall be identified as "First Article Unit".

(See generic forms 06.13.02.03, "Supplier Certification (Clause 19, 20, 22. 22.1)" and 06.13.02.04, "Supplier Certification (Clause 19, 20, 22. 22.1 – Continuation Sheet)" as examples of the information required.)

P&W/SP Source inspection shall be notified in advance a minimum of forty-eight (48) hours for in-state sellers, or seven (7) business days for out-of-state sellers when the parts are ready for First Article Inspection. Requests for First Article Inspections shall be made to P&W/SP Supplier Quality at the telephone number noted on the purchase order.

Upon successful completion of First Article Inspection, any changes to procedures, methods, or tooling shall be provided to P&W/SP/s Supplier Quality representative in writing for review and approval prior to shipment of affected line items. A First Article Inspection need not be repeated if permitted by the Buyer and provided there is no significant lapse in production (e.g. one year) and there have been no changes to the approved process and procedures that govern the fabrication of the part or component since the last delivery.

- 19.1 P&W/SP Quality Assurance Representative shall be present to witness the First Article Inspections.
- 19.2 P&W/SP Quality Assurance Representative shall review the First Article Inspection report for the first batch of parts produced for this purchase order.



- 19.3 The Seller shall include the First Article Inspection Report with the documentation package for the first shipment. P&W/SP will review the report at receiving inspection.

SECTION IV – TESTING REQUIREMENTS

20. Sample Plan (Applies only when 21, 22 or 22.1 are also required.)

The Seller may not use sampling inspection unless otherwise directed by the drawing, specification, or purchase order. The sample plan shall conform to ANSI/AQCZ1.4-1993 or MIL-STD-105 or MIL-STD-414. The sample plan must be submitted and approved in writing by P&W/SP Supplier Quality prior to its use. When computer aided machining is involved and after first piece acceptance, the Seller may establish a process control plan that will be used to ensure continued acceptability of production parts. The plan shall be submitted and approved in writing by P&W/SP Supplier Quality prior to its use.

(See generic forms 06.13.02.03, "Supplier Certification (Clause 19, 20, 22. 22.1)" and 06.13.02.04, "Supplier Certification (Clause 19, 20, 22. 22.1 – Continuation Sheet)" as examples of the information required.)

21. Inspection Record (Pass/Fail)

The Seller shall perform 100% inspection and recording of all measurable characteristics (pass/fail) for each part. This record shall be submitted with each part(s) shipment, must identify each characteristic, its drawing location, the allowable tolerance limits, the quantity inspected, and must show quality evidence that each characteristic has been inspected and accepted. If applicable the record shall be traceable to the part(s) by serial number. *

* Note: Serial Number Control – If the serial numbers are generated by the Buyer, they shall be within the range specified on the face of the purchase order. If the serial numbers are generated by the Seller, they shall have a consistent number of characters. In neither case shall they contain any duplication. If the serialized hardware contains serialized subcomponents then the Seller shall maintain a document that cumulatively tracks the serial numbers of those subcomponents to the final assembly serial numbers. In addition, the document shall identify those serial numbers that are scrapped and unused. An electronic format is preferred.

(See generic form 06.13.02.05, "Supplier Certification (Clause 21)" as an example of the information required.)

22. Inspection Record (Actuals)

The Seller shall perform 100% inspection and recording of actual data for each piece of this P.O. line item. The inspection record shall identify each characteristic, its drawing location, the allowable tolerance limits, the quantity inspected, and must show quality evidence that each characteristic has been inspected and accepted. If applicable the record shall be traceable to the part(s) by serial number. *

* Note: Serial Number Control – If the serial numbers are generated by the Buyer, they shall be within the range specified on the face of the purchase order. If the serial numbers are generated by the Seller, they shall have a consistent number of characters. In neither case shall they contain any duplication. If the serialized hardware contains serialized subcomponents then the Seller shall maintain a document that cumulatively tracks the serial numbers of those subcomponents to the final assembly serial numbers. In addition, the document shall identify those serial numbers that are scrapped and unused. An electronic format is preferred.

(See generic forms 06.13.02.03, "Supplier Certification (Clause 19, 20, 22. 22.1)" and 06.13.02.04, "Supplier Certification (Clause 19, 20, 22. 22.1 – Continuation Sheet)" as examples of the information required.)

22.1 Inspection Record (Black Diamond)

The supplier shall inspect and record the actual (variable) data for every "Black Diamond" feature noted on the drawings for each part of the order. All other features are to be 100% inspected with attribute (good/bad) data recorded for each part of the order. The inspection record shall identify the characteristic, its drawing location the allowable tolerance limits, quantity inspected, and inspection results. The record shall be submitted with each shipment, must be traceable to the part(s) by serial number or job number if the parts are not serialized and must show evidence that each characteristic has been inspected and accepted. See generic form 06.13.02.02.01 as an example of the information required.

23. Pressure/Hydrostatic Test Report

Prior to any pressure/hydrostatic testing on this purchase order, the Seller shall submit and obtain P&W/SP Supplier Quality written approval of a sketch of the test setup, equipment and gages to be used, and testing media to be used. The sketch shall show the general configuration of the item under test with a schematic of the test system in sufficient detail to allow recreation of the test from the sketch.

With each shipment, the Seller shall provide a certified report of pressure/hydrostatic test results. Unless otherwise specified, the report shall conform to the requirements as specified in the purchase order or test specification.

24. Proof Test Report and Test Set-Up Sketch

Prior to any proof testing on this purchase order, the seller shall submit and obtain P&W/SP Supplier Quality written approval of a sketch of test setup, weight and accuracy of proof load, and results of post load inspection showing concurrence. The sketch shall show the general configuration of the item under test, the point and method of application of the loads, and sufficient detail to allow recreation of the test from the sketch.



With each shipment, the Seller shall provide a certified report of proof test results. Unless otherwise specified, the report shall conform to the requirements as specified in the purchase order or test specification.

25. Certificate of Compliance and Test Data

The Seller shall comply with the Acceptance Test Requirements of the applicable specification, State of Work, or other procurement documents. Submit with each shipment a certificate of compliance signed by a responsible representative for the Electrical or Functional Test data required by the applicable specification, State of Work or other procurement document.

(See generic forms 06.13.02.06, "Supplier Certification (Clause 25)" as an example of the information required.)

SECTION V – NONCONFORMING SUPPLIES REQUIREMENTS

26. Cause and Corrective Action

The Seller shall take timely and effective action in eliminating the direct root cause of deficiencies reported by P&W/SP. Seller shall respond to P&W/SP's request for corrective action by date required.

27. Nonconformance Documentation

The Seller shall establish a documented system for the identification, documentation, and control of nonconforming hardware.

When an article or material, produced or procured by the Seller or its subvendor does not conform to applicable drawings, specifications or other requirements (e.g. a critical process), it shall be identified as nonconforming, segregated and controlled to the extent practicable and held for review action. Identification shall be made immediately after the nonconformance is noted.

Unless specifically stated otherwise, Material Review Board (MRB) authority is not granted to the Seller. Only preliminary dispositions of "scrap", "rework-to-print" or "return-to-vendor" shall be made by the Seller. All discrepancies from P&W/SP approved drawings or specifications that involve dispositions other than "rework-to-print", "scrap", or "return-to-vendor" shall be submitted to P&W/SP Supplier Quality on a Nonconformance Report or the Sellers equivalent for P&W/SP MRB action. P&W/SP MRB dispositions of "scrap" or "repair/rework" shall require the submittal of form 13.01.02.06, "Supplier NCR Certificate for Completion for Scrap" or form 13.01.02.07, "Supplier NCR Certificate for Completion for Repair/Rework" respectively.

NOTE: Discrepant hardware shall be segregated, controlled, and held at the Seller's facility pending written direction by P&W/SP's MRB. When serialized nonconforming hardware is dispositioned "Scrap" the Seller shall take the appropriate action not only to ensure that the hardware is properly disposed of, but also that the serial numbers assigned to that hardware are not re-used. Under **NO** circumstances shall "Scrap" hardware be allowed to be installed in "flight" hardware.

The Seller shall note on the shipping document or certificate of conformance, the P&W/SP Nonconformance Report number that affected the material being shipped. A closed copy of all "MRB" NCR's shall accompany the material.

NOTE: For orders that require source inspection the data submitted for review by P&W/SP Quality Assurance prior to release shall include a summary of ALL of the Seller's nonconformance reports associated with the end item and its subcomponents.

SECTION VI – DOCUMENTATION REQUIREMENTS

28. Documentation Delivery

28.1 For parts being shipped to P&W/SP, the required documentation shall accompany the material or parts to the "Ship To" destination noted on the purchase order. All documentation shall be traceable to the item delivered. Each page of documentation supplied shall be legible and photographically reproducible through two additional reproductions.

28.2 For parts that are "drop shipped" to destinations other than P&W/SP, the required documentation shall be sent to P&W/SP, Attention: Data Acceptance Center. All documentation shall be traceable to the item delivered. Each page of documentation supplied shall be legible and photographically reproducible through two additional reproductions.

29. Sample Data Package

The Seller shall submit a sample copy of their proposed Quality Assurance documentation package to P&W/SP Supplier Quality for review and written approval of content and format. This sample data package format shall be used for all future data packages.

30. Nondestructive Test Report

Submit with each shipment one (1) reproducible record of the actual nondestructive test report. The test report shall conform to the requirements stated in the applicable test specification. As a minimum, the report shall indicate: (See form 06.13.02.07, "Supplier Certification (Clause 30)".)

- a. Name and address of organization performing the NDT.
- b. Identification of the part(s) by part number and serial number. (Applicable only when serial numbers are physically displayed on the parts by the manufacturer.)



- c. Procedure and revision level the NDT was performed to.
- d. Technique sheet used (if applicable).
- e. Accept/reject criteria or reference to the document that contains it.
- f. Results of the inspection, i.e. number of parts rejected.
- g. For all rejected parts, state the specific reasons for part rejection.
- h. Identification and MIL-STD-410/ASNT Qualification level of NDT operator(s) that performed and/or interpreted the results.
- i. Date the NDT test was performed.

31. Special Processes Certification

Submit, with each shipment, a certification of Special Process performed. As a minimum, the certification is to contain: (See form 06.13.02.08, "Supplier Certification (Clause 31)".)

- a. Name and address of organization performing the NDT.
- b. Identification of the part(s) by part number, serial number, or lot number (when applicable).
- c. Date the Special Process was performed.
- d. Special processes performed including specification numbers and revisions including change notices, ECO's, level, type, and class or method per specification or print.
- e. Quantity.
- f. Signature and title of the authorized Seller representative.

32. Objective Evidence

The Seller shall retain objective evidence of the quality of items supplied, such as manufacturing, inspection, test, and special process records for a minimum of ten (10) years. This evidence may be destroyed within the ten (10) year time period only with written approval by P&W/SP. These records shall be made available for review by P&W/SP as required.

33. Shelf Life Certification

The Seller shall submit with each shipment of items with limited shelf life, the manufacturer's shelf life certification by lot or batch number. A minimum of 50% of the shelf life shall be remaining upon receipt by P&W/SP. The certification shall include:

- a. The manufacturer's name.
- b. Type of material.
- c. Shelf life parameter (e.g., days, months, years).
- d. Number of months from date of manufacture, or date of shipment, whichever is applicable to the shelf life parameter.
- e. Storage temperature.
- f. Expiration Date

34. Component Weight Record

The weight of each item delivered on this purchase order shall be recorded, to an accuracy of 0.2% on a P&W/SP supplied Component Weight Record Form.

35. Physical Material Analysis Certification

The certification must be signed and dated by an authorized representative. Submit with each shipment:

- a. One (1) reproducible record of actual physical analysis.
- b. One (1) reproducible record of certification of conformance to the applicable material specification(s) including revision level and traceability identification by heat, lot, batch or melt number.
- c. One (1) reproducible record of copy of test methods or procedures with the test results when so stipulated in the body of P&W/SP's purchase order.

35.1 Chemical Analysis Certification

The certification must be signed and dated by an authorized representative. Submit with each shipment:

- a. One (1) reproducible record of actual chemical analysis.



- b. One (1) reproducible record of certification of conformance to the applicable material specification(s) including revision level and traceability identification by heat, lot, batch or melt number.
- c. One (1) reproducible record of copy of test methods or procedures with the test results when so stipulated in the body of P&W/SP's purchase order.

35.2 Record of Chemical/Physical Material Analysis

- a. One (1) reproducible record of actual chemical material analysis.
- b. One (1) reproducible record of actual physical material analysis results per the applicable specification including the revision level.

36. Manufacturer's Certification

Submit, with each shipment, a Manufacturer's Certification for the item supplied. This certification must contain, as a minimum: (See form 06.13.02.09, "Supplier Certification (Clause 36)".)

- a. The applicable P&W/SP specification or part number(s) and revision level(s), and/or the Manufacturer's part number as specified on the purchase order.
- b. Traceability * by manufacturer's lot number, serial number, batch number, shop or job order number, date code, et cetera.

* **NOTE:** If your firm represents a "distributor" relationship to the manufacturer, traceability must be provided through all contract tiers back to the manufacturer's certification. This may be accomplished by your separate certification, in addition to the manufacturer's certification indicating traceability to the manufacturer's lot number, batch number, shop or job order number, date code, et cetera. If your firm is an "Authorized Distributor" for specific manufacturers then your certification shall be deemed equivalent, and the manufacturer certificate need not be submitted.

- c. If the item being delivered includes P&W/SP furnished material, then include a statement or listing indicating which material was supplied and its P&W/SP trace number or include a copy of the Shipping Order that supplied the material.
- d. Signature of an authorized representative of the manufacturer and distributor (when applicable).
- e. If the manufactured item contains detailed components, e.g. fasteners, paints, et cetera, as defined by the parts list, then the Seller shall maintain the manufacturer certification on file for review.

36.1 Configuration Summary Record

The Seller shall submit a Configuration Summary record with each lot of parts or components shipped. The configuration Summary shall be signed by an authorized representative of the Sellers Quality assurance organization. This record shall include the following: (See forms 06.13.02.10, "Supplier Certification (Clause 36.1)" and 06.13.02.11, "Supplier Certification (Clause 36.1 – Continuation Sheet)" as examples of the information required.

- a. P&W/SP's purchase order number and applicable change order number.
- b. P&W/SP's drawing number, revision level, and applicable Engineering Change Orders (ECO's).
- c. All applicable drawings and specifications referenced in the P&W/SP drawing – P&W/SP, military or vendor (9xx series find numbers on the parts list) along with their applicable revision number and changes.
- d. P&W/SP's part number including dash number(s).
- e. Part serial number(s) * or lot number(s).

* **NOTE:** Serial number Control – If the serial numbers are generated by the Buyer, they shall be within the range specified on the face of the purchase order. If the serial numbers are generated by the Seller, they shall have a consistent number of characters. In neither case shall they contain any duplication. If the serialized hardware contains serialized subcomponents then the seller shall maintain a document that cumulatively tracks the serial numbers of those subcomponents to the final assembly serial numbers. In addition, the document shall identify those serial numbers that are scrapped and unused. An electronic format is preferred.

37. Specification Conformance

Submit, with each shipment, a statement of conformance to material compound specification listing the cure date for each lot. The statement must be signed by an authorized representative of the manufacturer and distributor (when applicable).

38. Safe Working Load Certificate – Deleted

39. ASME Code Report – Deleted



40. Change Compliance Certification

The seller shall include, as part of the documentation package submitted with all goods and services provided to the Buyer, a certification signed by an authorized representative of the Seller, which states the following: "Seller hereby certifies that all Supplier Quality Requirements in Clause 10 (Form 06.13.02.02) that are specified as applicable in the purchase order have been fully documented and properly executed by the Seller prior to rendering to the Buyer the goods or services associated with this certification." (See generic form 06.13.02.12, **Change Compliance Certification**, as example of the information required.)

41. Certification of Compliance (QQ-P-416)

The vendor shall include Certification of Compliance to specification QQ-P-416. The certification must be signed by an authorized representative of the manufacturer and distributor (when applicable). This certification shall specify the following:

- a. Hardness and luster finish – reference paragraph 3.2.7.
- b. Embrittlement relief back time – reference paragraph 3.2.8 (minimum 3 hours).

42. Catalog Items

Items that are only ordered by the manufacturers' or Seller's catalog number, shall conform to the catalog description regarding size, finish, material and performance. The part or the packaging shall be marked with the catalog identification number.

SECTION VII – METROLOGY REQUIREMENTS

43. Quality Assurance Exhibit QA-S35

The Sellers Quality Control organization shall be responsible to ensure that items of this procurement are packaged in such a manner that the dimensional integrity is preserved, contamination and corrosion are prevented, and no physical damage occurs. When specified, ensure that packaging is in accordance with the applicable specification, drawing, or Material Handling Card.

44. Quality Assurance Exhibit QA-S38

The Seller shall comply with P&W/SP Quality Assurance Exhibit QA-S38, "Tool Proving and Control of Production Tools at Contractors".

45. Weights and Measurement Accuracy Certification

Submit certification, with each shipment, of the accuracy of measurements and weights included. Indicate traceability of measurements to the National Institute of Standards and Technology (formerly NBS). The certification must be signed by an authorized representative of the Seller.

46. Calibration Record

Submit with each shipment one (1) reproducible record of actual calibration results. Indicate traceability of measurements to the National Institute of Standards and Technology (formerly NBS). The record must be signed by an authorized representative of the calibrating organization.

SECTION VIII – PACKAGING REQUIREMENTS

47. Packaging

The Sellers Quality Control organization shall be responsible to ensure that items of this procurement are packaged in such a manner that the dimensional integrity is preserved, contamination and corrosion are prevented, and no physical damage occurs. When specified, ensure that packaging is in accordance with the applicable specification, drawing, or Material Handling Card.

48. Package Design

The Seller shall submit his proposed packaging design criteria to P&W/SP for review/approval prior to the first shipment on this procurement.

49. Deleted

50. Deleted

SECTION IX – SOFTWARE

51. Level I Software (Contractually Deliverable Software)

Level I software (contractually deliverable software) shall be developed with the controls of a formal process that includes the following activities.

- a. Software program planning.
- b. Software design control.
- c. Software testing control.



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QUALITY ASSURANCE REQUIREMENTS**

- d. Software release and deployment control.
- e. Software library control.
- f. Software configuration management.
- g. Software quality assurance plan.

52. Level II Software (Internally Used Software)

When Level II software (internally used software) that directly affects acceptance or rejection decisions on deliverable items is developed and deployed, there shall be a formal program that includes the following activities:

- a. Software program planning.
- b. Software design control.
- c. Software testing control.
- d. Software library control.

53. Software Quality Assurance Program

Submit a copy of the Software Quality Assurance Program for review and approval by P&W/SP Supplier Quality prior to its application on the purchase order. Mandatory witness and verification points will be incorporated into the plan.



APPENDIX A

Sample Production Readiness Review Agenda

internal
correspondence



Pratt & Whitney

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P&W Space Propulsion

SAMPLE

PRODUCTION READINESS REVIEW AGENDA

- I. Introduction**
 - Personnel in Attendance/Roster
 - Organizational Charts
 - Production Capacity
- II. Documentation Status**
 - Incorporation of CSD Drawing Requirements and Comments.
 - Manufacturing Planning/Traveler Content
 - Qualification Testing and Requirements
 - Lot Acceptance Testing Plan
 - Final Acceptance Test Plan
 - Sample Transmittal Data Package/Certification of Compliance
- III. Material Status**
 - Traceability System
 - Shortages/Delivery
 - Stock Material Levels
- IV. Quality Plans**
 - First Article Inspection Plan
 - Manufacturing Inspection Planning
 - Incorporation of Customer Mandatory Inspection Points
 - Destructive Physical Analysis
 - Failure Analysis Plan and Support
- V. Contract Review**
 - Drawing Revision Incorporation
 - Revised Quantities
 - Quality P.O. Codes, Revision Impact
- VI. Problem Resolution**
 - Review of all Nonconformances and Corrective Actions
 - Review of Corrective Action System
- VII. Production Schedule**
- VIII. Facility Tour**