CONTRACT DATA REQUIREMENTS LIST

(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER ____

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
F100-PW-200/-220 Engines		

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE
A001	Reliability Test Reports	Nsn-2840-01-087-6629 Noun: #4-Bearing Air Sealing Ring Segment Production Lot Test / Inspection Report

17. PRICE GROUP

18. ESTIMATED TOTAL PRICE

4. AUTHORITY (Data Acquisition Document No.)	5. CONTRACT REFERENCE	6. REQUIRING OFFICE
DI-TMSS-81586 / T		DSCR-JLTB

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
SD	A	ASGEN	30DATC

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	See Block 16	N/A

16. REMARKS

Nsn-2840-01-087-6629 , Part# 4036972 (77445).

Block 4. Tailored:

Use / Relationship
The Vendor shall provide a Final Test Report on Production Lot Sample Testing (PLT) and/or Inspection results for 02-percent of each production lot manufactured.

Requirements
The Report shall address DID para-3 sub-headers a thru i as well as para-3.2 and para-3.3, delete Summary Report rqmt's para-3.1 and 3.1.1.

The Report Analysis shall address the following as a minimum:

(a). Verify all dimensional and surface texture rqmt's of dwg 4036972 & spec's.

(b). Verify conformance of dwg 4036972 Note-4, ...must conform to a fixture of basic form..., and calibration records as applicable.

(c). Verify conformance of Pratt & Whitney approved sources for special processes and material is per PWA 1090-1, Porous NI-CR.

(e). Verify test equipment utilized for each inspection / test and provide evidence of any applicable calibration record.

Quantity shall be selected by the DCM QAR for Awardee testing.

Destructive testing shall be approved by the DSCR PCO only on PLT samples.

Block 7. The Report shall contain the results from the Awardee testing as well as DCM-QAR concurrence of results. Vendor is only authorized to ship contract quantity upon written authorization from the DSCR-PCO.

Block 11. Report is due no later than 200-days after contract award.

Block 14. Distribution as follows: Copy of the contract and drawing(s) shall be provided to:

1. DCM - QAR
   Vendor Office
2. Defense Supply Center Richmond(DSCR)
   Attn: DSCR-JLPA-P1V
   8000 Jefferson Davis Highway
   Richmond, VA 23297-5878

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
DCM - QAR	0	0	1
Vendor DCM			
DSCR-JLPA PCO	0	1	0
Richmond, VA			
15. TOTAL →	0	1	1

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Joseph Lesyk	09-27-2002	Joseph Lesyk	09-27-2002

DD FORM 1423-1, AUG 96 (EG) PREVIOUS EDITION MAY BE USED.

Designed using Perform Pro, WHS/DIOR, Aug 96

INSTRUCTIONS FOR COMPLETING DD FORM 1423

(See DoD 5010.12-M for detailed instructions.)

FOR GOVERNMENT PERSONNEL

Item A. Self-explanatory.

Item B. Self-explanatory.

Item C. Mark (X) appropriate category: TDP - Technical Data Package; TM - Technical Manual; Other - other category of data, such as "Provisioning,""Configuration Management," etc.

Item D. Enter name of system/item being acquired that data will support.

Item E. Self-explanatory (to be filled in after contract award).

Item F. Self-explanatory (to be filled in after contract award).

Item G. Signature of preparer of CDRL.

Item H. Date CDRL was prepared.

Item I. Signature of CDRL approval authority.

Item J. Date CDRL was approved.

Item 1. See DoD FAR Supplement Subpart 4.71 for proper numbering.

Item 2. Enter title as it appears on data acquisition document cited in Item 4.

Item 3. Enter subtitle of data item for further definition of data item (optional entry).

Item 4. Enter Data Item Description (DID) number, military specification number, or military standard number listed in DoD 5010.12-L (AMSDL), or one-time DID number, that defines data content and format requirements.

Item 5. Enter reference to tasking in contract that generates requirement for the data item (e.g., Statement of Work paragraph number).

Item 6. Enter technical office responsible for ensuring adequacy of the data item.

Item 7. Specify requirement for inspection/acceptance of the data item by the Government.

Item 8. Specify requirement for approval of a draft before preparation of the final data item.

Item 9. For technical data, specify requirement for contractor to mark the appropriate distribution statement on the data (ref. DoDD 5230.24).

Item 10. Specify number of times data items are to be delivered.

Item 11. Specify as-of date of data item, when applicable.

Item 12. Specify when first submittal is required.

Item 13. Specify when subsequent submittals are required, when applicable.

Item 14. Enter addressees and number of draft/final copies to be delivered to each addressee. Explain reproducible copies in Item 16.

Item 15. Enter total number of draft/final copies to be delivered.

Item 16. Use for additional/clarifying information for Items 1 through 15. Examples are: Tailoring of documents cited in Item 4; Clarification of submittal dates in Items 12 and 13; Explanation of reproducible copies in Item 14.; Desired medium for delivery of the data item.

FOR THE CONTRACTOR

Item 17. Specify appropriate price group from one of the following groups of effort in developing estimated prices for each data item listed on the DD Form 1423.

a. Group I. Definition - Data which is not otherwise essential to the contractor's performance of the primary contracted effort (production, development, testing, and administration) but which is required by DD Form 1423.

Estimated Price - Costs to be included under Group I are those applicable to preparing and assembling the data item in conformance with Government requirements, and the administration and other expenses related to reproducing and delivering such data items to the Government.

b. Group II. Definition - Data which is essential to the performance of the primary contracted effort but the contractor is required to perform additional work to conform to Government requirements with regard to depth of content, format, frequency of submittal, preparation, control, or quality of the data item.

Estimated Price - Costs to be included under Group II are those incurred over and above the cost of the essential data item without conforming to Government requirements, and the administrative and other expenses related to reproducing and delivering such data item to the Government.

c. Group III. Definition - Data which the contractor must develop for his internal use in performance of the primary contracted effort and does not require any substantial change to conform to Government requirements with regard to depth of content, format, frequency of submittal, preparation, control, and quality of the data item.

Estimated Price - Costs to be included under Group III are the administrative and other expenses related to reproducing and delivering such data item to the Government.

d. Group IV. Definition - Data which is developed by the contractor as part of his normal operating procedures and his effort in supplying these data to the Government is minimal.

Estimated Price - Group IV items should normally be shown on the DD Form 1423 at no cost.

Item 18. For each data item, enter an amount equal to that portion of the total price which is estimated to be attributable to the production or development for the Government of that item of data. These estimated data prices shall be developed only from those costs which will be incurred as a direct result of the requirement to supply the data, over and above those costs which would otherwise be incurred in performance of the contract if no data were required. The estimated data prices shall not include any amount for rights in data. The Government's right to use the data shall be governed by the pertinent provisions of the contract.

DATA ITEM DESCRIPTION

Title: Reliability Test Reports

Number: DI-TMSS-81586
AMSC Number: G7401
DTIC Applicable: N/A

Approval Date: 5 October 2000
Limitation: N/A
GIDEP Applicable: No

Office of Primary Responsibility: G/Y243
Applicable Forms: N/A

Use/relationship:
These reports are formal records of the results of the contractor's reliability tests and will be used by the procuring activity to evaluate the degree to which the reliability requirements have been met. The reports shall be periodic test summary reports (see 3.1 below) or Final Test Reports (see 3.2 below) as reflected in the contract. These reports may be used to report the results of reliability tests or tests from which reliability evaluation is a by-product.

Requirements:

1. Reference documents: None

2. Format: Contractor format is authorized.

3. Content: The Reliability Test Reports shall contain the results of each test or other action taken to demonstrate the level of reliability achieved in the contract end item and its constituent elements required by the contract. The reports shall specifically contain the following:

a. Test article identification and full description of test specimens utilized, including any deviations from the configuration specified in the applicable test plan.
b. Date and location of test or evaluation.
c. Statement of test/evaluation objectives, including type, unit of measure, and quantitative goals/requirements to be demonstrated.
d. Statistical confidence calculations, if appropriate.
e. Discussion of methods and conditions of the demonstration, including test plan used, environmental levels, test profile, methods of evaluating the data obtained and comparison of the conditions with those anticipated in ultimate deployment and use of contract item.
f. Results obtained, including specific identification and discussion of objectives demonstrated satisfactorily and those not demonstrated satisfactorily.
g. Corrective action anticipated, if applicable.
h. Contractor's conclusion and recommendations based on evaluation of the test/demonstration results.
i. Requirements for and results of retest in cases where a reject decision were reached.

3.1 Summary reports. Periodic Test Summary Reports shall consist of summaries of the progress or status of various reliability tests underway during the reporting period. All periodic summaries shall include the following:

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a. Type and number of units on test and the type of test.
b. Total elapsed unit hours of test time during the period covered in the report.
c. Total number of equipment failures for each operational mode specified in the duty cycle.
d. Description of each failure problem area, related failure analysis, and corrective action.
e. Test conditions and analysis of any variation from specified conditions.
f. Present accept/reject status.
g. A chart showing a plot of the observed Mean Time Between Failures (MTBF) from start of test through the report period and the predicted value of MTBF for comparison.
h. The status and/or disposition of each corrective action

3.1.1 It is intended that the text of these reports be limited to brief, concise statements of significant progress and present status.

3.2 Final report. The Final Reliability Test Report shall include the information required by 3.1, items a. through h., and the results of the completed reliability tests or other action performed or evaluated to demonstrate reliability. The Final Report can be divided into two parts: Part 1, covering Reliability Qualification Testing, and Part 2, covering Production Reliability Acceptance Tests. Test reports shall include a failure summary and analysis and a general reliability analysis.

3.3 It is intended that the text of these reports be limited to brief and concise statements.

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QUALIFICATION REQUIREMENTS FOR MANUFACTURE OF F100 ENGINE PARTS

P/N: **4036972**
NSN: **2840010876629**

Rev: 3
02-Mar-01

I. HARDWARE DESCRIPTION

A. Nomenclature:
Ring Segment - Air Sealing, No.4 Bearing

B. Function:
This segment is used in the service rework of the #4 Bearing Air Sealing Ring Assembly.

C. Material Composition:
PWA 1090-1 Porous Nickel-Chromium

D. Critical Life Characteristics:
Surfaces must be flat within tight tolerances

II. REFERENCE DOCUMENTS

A. LPF-QAR-004: "General Quality Assurance Requirements For F100 Engine Components."

III. JUSTIFICATION FOR QUALIFICATION REQUIREMENTS

Ref.: FAR Subpart 9.2, AFMCFAR Subpart 5309.2

The following paragraphs provide the justification for qualification requirements for this part.

A. Criticality of Part:

This is a Critical Application Item (CAI) used on the F-15 and F-16 aircraft primary propulsion system, the Pratt & Whitney F100 engine. Failure of this part can result in secondary damage to the engine and subsequent mission abort.

B. Complexity of Part:

This part is not complex to manufacture, however, it is used in a critical location and must therefore require strict process control and quality standards.

C. Government Risk:

The following paragraphs document the reasons why the risk to the government of buying this part from an unqualified source is compound.

1. The probability of an unqualified source producing an unsatisfactory part is high.

2. The probability of an unqualified source failing to produce within schedule is high.

3. A high potential exists for an unqualified source to underestimate the manufacturing difficulty and miss critical delivery schedules.

4. Untimely delivery critically impacts end item overhaul/repair schedules. Failure to deliver on schedule may result in additional high cost emergency procurements.

5. An inferior part can cause extensive damage to the end item resulting in a high cost of repair.

D. There are no costs incurred by an offeror for qualification testing and testing evaluation under the requirements of paragraphs VI.A or VI.B. However, the offeror's development of a Source Approval Request (SAR) package to be submitted for Government evaluation may cost as much as $2500. In addition, the cost incurred by offerors for Government evaluation of their SAR submitted under the requirements of paragraphs VI.A or VI.B may be as much as $1,200. This cost may be borne by the Government if it is in the best interest of the Government to qualify alternate sources.

IV. JUSTIFICATION FOR QUALIFICATION PRIOR TO CONTRACT AWARD
Ref.: AFMCFAR Subpart 5309.2

The following paragraphs provide the rationale for requiring a demonstration of the qualification requirements prior to contract award.

A. The risk of default by the contractor must be minimized as the shortest combined administrative and production lead-time is over 21 months.

B. The technical risk must also be minimized due to the criticality of the part (Reference the section "Criticality of Part" in paragraph III.A).

C. The manufacturing and processing techniques are critical to performance and reliability (Reference the section "Criticality of Part" in paragraph III.A).

D. The risk to the government in determining a potential vendor's capability without an actual demonstration of that capability must be minimized. The expertise that is required to manufacture this part is not commonly available or easily obtained and therefore must be demonstrated. (Reference the section "Complexity of Part" in paragraph III.B).

V. DATA AND DOCUMENTATION REQUIREMENTS

The following paragraphs document the data that must be submitted with a request for source approval. All documentation submitted shall be the latest revision published. Documentation shall be bound (preferably a three ring binder) with a table of contents and corresponding sections tabbed.

A. The potential Offeror must substantiate that they possess latest revision of the following data by providing a copy in the source approval package, or must provide DCMA or other government representative written verification that the potential vendor has the latest revision of the following data:

1. Drawing Number: 4036972 (Including all sub-assembly or detail drawings specified on this drawing number)

2. Quality Assurance Data (QAD): 4036972 As applicable, include the QAD for each sub-assembly or detail part listed on the above drawing.

3. All applicable specifications called out on the drawing, and/or assembly and detail drawings, and on the QAD (as applicable). These include:

   a) Process Specifications
   b) Inspection Processes
   c) Material Specifications

B. The potential Offeror's Quality Assurance System must meet or exceed the requirements described in the attached document LPF-QAR-004.

C. The vendor shall supply a list of all manufacturing and inspection processes that will be performed, both in-house or by sub-vendors. The vendor shall substantiate that sources to be employed for any significant process, including themselves, with the exception of conventional metal removal processes, are currently approved by Pratt & Whitney for the specific process required or another OEM for an equivalent process. The vendor must supply the name and address of each certified vendor to be used. In all cases where process approval is relative to an OEM process specification other than Pratt & Whitney, the vendor shall provide the complete specification and demonstrate the equivalence of the specifications.

VI. SUBSTANTIATION OF MANUFACTURING CAPABILITY

The following paragraphs document the methods to be used to substantiate a vendor's capability to manufacture this item.

A. A vendor who has manufactured the item for the prime contractor or for other US DoD users of the same item within the last five years may be approved as a source for the part provided that the vendor was responsible for all material procurement, inspection, and finishing of the end item, i.e., the prime manufacturer did not add any value to the end item. The vendor must submit evidence of the scope of work for the part indicating that they had primary responsibility for all operations necessary for the completion of the part for delivery to the customer. This evidence shall include MANUFACTURING PROCESS SHEETS.

B. Other vendors will be considered for approval on the basis of their ability to manufacture a similar item for the prime contractor, US DoD, or a NATO country. The following conditions must be met for approval by similarity:

   1. Submit evidence of the successful manufacture and sale of the similar item, to include purchase orders and shipping documents reflecting production quantities within the last five years. This evidence must document that the vendor had primary responsibility for all operations necessary to produce the similar item, and that the similar item was accepted by

the customer. Also include a summary of quality deficiencies experienced within the last two years of production of the similar item(s) with coordination from the Q. A. manager. The vendor shall provide SPECIFIC similarities and differences between the subject part and the similar part.

2. The vendor shall substantiate that the similar component(s) submitted will satisfy the following criteria:

   a) Fabricated of the same alloy or an alloy from the same alloy family, e.g. Alpha Titanium's, Inconels, Austenitic Stainless Steels.

   b) Illustrates the ability of the vendor, in conjunction with their sub-vendors, to perform all significant processes to be employed and maintain requisite tolerances and surface finish requirements.

   c) The data must also show that the manufacturing and inspection/test processes for the similar part demonstrate the full range of difficulty required for the subject part. Included in this data shall be complete MANUFACTURING PROCESS SHEETS for the similar item.

3. A first article requirement may be included in any contract resulting from approval based upon similarity. The estimated cost of first article testing is $2,500.00. These tests may include material properties analysis, dimensional analysis, and possibly rig test. At least ten first articles would be required with five first article requiring destructive testing.

VII. RESPONSIBLE ENGINEERING ORGANIZATION

The responsible organization for establishing these qualification requirements is the F100 Engine Engineering Branch, within the Fighter Propulsion Division of the Oklahoma City Air Logistics Center, Tinker Air Force Base, Oklahoma.

JOLLY C. SARTOR JR.
CHIEF, SYSTEMS SECTION
F100 ENGINEERING BRANCH

DATE: 27 FEB 04

EXPIRES IN 7 YEARS

1 APPLICATION

These requirements apply to all F100 engine parts.

2 PURPOSE

This document establishes the minimum technical requirements that prospective sources must satisfy to obtain engineering approval of their quality system. All documentation provided as evidence of compliance with requirements specified herein must be in English. Engineering source approval shall be valid for five years from the date of the OC-ALC letter notifying the contractor of engineering source approval.

3 REQUIREMENTS

3.1 The Offeror must provide a Quality Assurance Manual that accurately portrays their current quality assurance system. The Quality Assurance System must meet or exceed the requirements as described in this document. Additionally, the Quality Assurance System must satisfy one of the following:

3.1.1 Certified to ISO 9002 by the American National Standards Institute (ANSI) or the International Standards Organization (ISO) in Geneva, Switzerland, or

3.1.2 Previously certified within the last three (3) years to MIL-I-45208A plus paragraphs 3.1 through 3.5, 5.1, 5.2, 6.1, and 6.2 of MIL-Q-9858A by the DCMC or other appropriate government Quality Assurance Representative, or

3.1.3 Approved by the Original Equipment Manufacturer (OEM).

3.2 Proof of certification/approval must be provided and must be dated within the last three (3) years. The decision to approve or disapprove the Quality Assurance System shall only be made after a thorough review of the Offeror's Quality Assurance Manual by the cognizant engineering authority, OC-ALC/LPFR.

3.3 Copies of the latest document(s) which describe and govern the quality assurance system in effect at the Offeror's facility(ies). If provided within the last year and no significant changes have been incorporated this requirement may be waived. However, OC-ALC/LPFR as the cognizant engineering activity for the F100 engine reserves the right to request an additional copy in the event the previous submittal cannot be located.

3.4 P&W documentation identifying the specific conditions/restrictions (i.e., specific P/Ns, components, processes, or material this status applies to, production testing required for material release, testing the LCS supplier is authorized to perform, etc.) imposed by P&W with regard to Laboratory Control at Source (LCS) Supplier status if Offeror is a P&W-approved LCS Supplier. The fact that a sub-vendor is a P&W LCS Supplier shall not relieve the Supplier of the responsibility of conducting follow-on quality assurance surveillance to ensure that sub-vendors are providing conforming material.

3.5 Evidence that the emphasis in quality assurance planning is placed upon controlling processes to preclude generation of non-conformance's and is supplemented by sufficient inspections or tests to assure effective process control.

3.6 Offeror procedures/specifications governing the control of significant processes proposed for use in the fabrication of the approval item for assuring that:

3.6.1 Only Purchaser approved sources are used for raw material, significant processes, and major sub-components and adequate consideration is given to a source's capability and performance prior to placing an order.

3.6.2 The quality acceptance standards imposed in routine production acceptance both in-house and by sub-vendors are complete and approved by P&W and the test methods employed in routine production acceptance are sufficient to verify compliance with these standards.

3.6.3 Fabrication performed in-house and by sub-vendors is accomplished in accordance with work instructions specified in manufacturing process sheets, schedules, and/or technical control plans which define the exact sequence of all production operations and all process variables and all critical parameters of manufacturing operations which may directly affect material structure, mechanical properties, surface finish and/or direction or lay of the cutting action. The procedure shall also assure that work instructions have been approved by the customer.

3.6.4 All inspection of characteristics, which serves as the basis for final acceptance of a characteristic, including in-process inspections, are performed in accordance with work instructions specified in inspection method sheets which define all characteristics specified on the applicable P&W drawings and Quality Assurance Documents (QAD's), the classification of each characteristic, the Acceptable Quality Level (AQL) for each classification of characteristic, sample size, frequency of inspection, the specific inspection methodology to be utilized, and the required instrumentation. The procedure(s) shall also assure that all inspection method sheets have been approved by the customer.

3.6.5 Specific Offeror audit procedures/guidelines which pertain to process and product audits performed both in-house and at sub-vendor facilities. These procedures shall, as a minimum assure:

3.6.5.1 Strict adherence to the sequence, parameters, and all other significant process variables of manufacturing operations defined on manufacturing process sheets approved by the customer is maintained both in-house and at sub-vendors' facilities. Specific procedures for auditing and/or controlling requisite significant processes must be provided.

3.6.5.2 Dedicated equipment is properly maintained and calibrated and is capable of adequately performing its intended application.

3.6.5.3 General housekeeping and manufacturing practices employed do not adversely affect the quality of the end product.

3.6.5.4 Established process controls and production acceptance plans are providing products which conform to the Purchaser requirements.

3.6.6 Specific Offeror procedures for assuring that certificates of test or conformance provided by sub-vendors of raw material and significant processes are complete and supported by process data and numerical test results from an OEM-approved laboratory for the requisite testing, are representative of material received, and the material is in conformance with Purchaser requirements.

3.6.7 Adequate records are retained for documenting sub-vendor lists, sub-vendor quality ratings, layout inspection reports, all Purchaser and OEM approvals, component traceability, and objective evidence of conformance to product, process, and quality acceptance requirements; and are available to the Purchaser upon request.

3.6.8 Evidence of a system for controlling non-conforming material to ensure:

3.6.8.1 The classification of all non-conforming characteristics in terms of critical, major, and minor is approved by the Purchaser.

3.6.8.2 Final disposition of all non-conforming critical and major characteristics including rework and repair is approved by the Purchaser prior to implementation.

3.6.8.3 Effective control of non-conforming material at sub-vendor facilities.

---------- **END OF DOCUMENT** ----------