



**COST-PLUS-A-FIXED-FEE
RESEARCH & DEVELOPMENT CONTRACT**

Contract No. **SPECIMEN, 8/6/03**

BETWEEN

**CALIFORNIA INSTITUTE OF TECHNOLOGY
JET PROPULSION LABORATORY
(The "Institute" or "JPL")
4800 OAK GROVE DRIVE
PASADENA, CALIFORNIA 91109-8099**

AND

CONTRACTOR'S NAME AND ADDRESS HERE IN ALL CAPS

**THIS CONTRACT FOR
DESIGN CONCEPT VALIDATION FOR
MARS SCIENCE LABORATORY
HIGH FLOW PRESSURE REGULATOR (HFPR)**

IS A

SUBCONTRACT UNDER JPL'S NASA PRIME CONTRACT

TASK ORDER NO. **TBD**

A DO - C9 Rating is assigned to this Contract under DMS Regulation 1

CONTENTS

PREAMBLE..... 1

ARTICLE 1. STATEMENT OF WORK AND DELIVERY INSTRUCTIONS..... 2

ARTICLE 2. ALLOWABLE COSTS, FIXED FEE AND PAYMENT..... 7

ARTICLE 3.SPECIAL PROVISIONS..... 8

ARTICLE 4 OPTIONS 9

SIGNATURE PAGE.....10

The following documents are incorporated into and made a material part of this contract.

GENERAL PROVISIONS: Cost-Reimbursement with Commercial Organizations Contract R 8/03, with Incorporated Exhibits.

- Management of Government Property in the Possession of Contractors, Form JPL 0968
- Release of Information, Form JPL 1737
- Affiliate Access Report, Form JPL 1943
- Notification to Prospective Contractors of JPL's Ethics Policies and Anti-Kickback Hotline, Form JPL 2385
- Certifications, Form JPL 2892
- Asbestos Notification, Form JPL 2895
- Notice of Potential Tax Withholding R7/03

ADDITIONAL GENERAL PROVISIONS (AGPs)

Cost Accounting Standards and Administration of Cost Accounting Standards R 4/99

OR

Disclosure and Consistency of Cost Accounting Practices, and Administration of Cost Accounting Standards R 4/99

New Technology R 8/01 (Large Business)

OR

Patent Rights - Retention By The Contractor (Short Form) R 4/99 (Small Business)

PREAMBLE

This Contract, entered into on _____ by and between the CALIFORNIA INSTITUTE OF TECHNOLOGY (hereinafter called the "Institute" or "JPL"), a corporation organized and existing under the laws of the State of California, and {Name of Contractor} (hereinafter called the "Contractor"), a corporation organized and existing under the laws of the State of {State of Contractor Incorporation} and constituting a subcontract under Prime Contract NAS7-1407 between the Institute and the Government;

WITNESSETH THAT:

The Contractor agrees to furnish and deliver the supplies and to perform the services set forth in this Contract for the consideration stated herein.

ARTICLE 1. STATEMENT OF WORK AND DELIVERY INSTRUCTIONS

On or Before

1.0 The Contractor shall provide the resources necessary to design, manufacture, test and deliver High Flow Pressure Regulators (HFR). The HFR shall be a pneumatic pressure regulator that shall control the flow of helium gas to the propellant tank of the Mars Descent Propulsion System. The HFR shall meet or exceed the performance goals of Exhibit I "Preliminary MSL High Flow Regulator Goals". In the performance of this effort, the Contractor shall:

1.1 Conduct a Kick-off Review at the Contractors location to document:

1 month after
date of contract

1.1.1 The design and interface factors affecting the HFR planned for this program.

1.1.2 Any expected performance limitations of the planned design and/or alternate configurations considered.

1.1.3 Present an Implementation Plan for activities through Development Effort Closeout including the baseline schedule, work breakdown structure and dictionary and baseline cost estimate as required in Exhibit II.

1.1.4 Present a baseline schedule for activities through Flight Qualification.

1.2 Breadboard Design and Test:

1.2.1 Perform design and analysis tradeoffs necessary to substantiate an HFR design.

1.2.2 Generate complete models as necessary to demonstrate performance of the design.

1.2.3 Present the results to JPL for approval at the Concept Design Review in accordance with paragraph 1.6.2

1.2.4 Fabricate a Breadboard HFR and perform testing to demonstrate the performance goals of Exhibit I

1.3 Development Unit Design and Test:

1.3.1 Update the analyses and design of the HFR and recommend design changes from the Breadboard design.

1.3.2 Present the results to JPL for approval at the Breadboard Design Review in accordance with paragraph 1.6.3.

1.3.3 Fabricate a Development HFR and perform testing to

demonstrate the performance goals of Exhibit I.

1.4 Verification Unit Design and Test:

- 1.4.1 Update the analyses and design of the HFR and recommend design changes from the Development design.
- 1.4.2 Prepare draft procedures recommended for use in performing an HFR flight qualification program.
- 1.4.3 Present the results to JPL for approval at the Development Design Review in accordance with paragraph 1.6.4.
- 1.4.4 Fabricate and test a Design Verification Unit following the procedures developed in 1.4.2 above without implementing formal Quality Assurance.
- 1.4.5 Perform HFR and pressure system testing, representative of a Qualification program, demonstrating HFR performance with a representative high pressure Helium source and expelling water at representative flow rates (see Exhibit I)

1.5 Development Effort Closeout:

- 1.5.1 Update the analyses of the HFR and identify any issues resulting from the Design Verification Unit testing.
- 1.5.2 Prepare recommendations for the Flight Qualification of the HFR.
- 1.5.3 Present the results to the JPL Critical Design Review in accordance with paragraph 1.6.5.

1.6 Documentation and Status Reporting

- 1.6.1 Informal weekly status reports to the JPL Technical Manager as required in Exhibit II.
- 1.6.2 Concept Design Review: Conduct a Concept Design Review of the HFR design concept developed under 1.2 above. The content of the Concept Design Review shall include but not be limited to the following:
 - 1.6.2.1 Provide a design description including top level layouts and drawings of design along with supporting analysis.
 - 1.6.2.2 Quantify the expected compliance of the design with the goals of Exhibit I.

Weekly
beginning 1
week ADOC

5 months after
date of contract

- 1.6.2.3 Identify areas of potential technical or schedule risk.
- 1.6.2.4 Initiate and maintain an action item list.
- 1.6.3 Breadboard Design Review (BDR): Conduct a BDR based on the HFR design concept developed under 1.3 above. The content of the BDR shall include but not be limited to the following:
 - 1.6.3.1 Provide a design description including top and detail level layouts and drawings of design along with supporting analysis.
 - 1.6.3.2 Quantify the expected compliance of the design with the goals of Exhibit 1.
 - 1.6.3.3 Identify areas of potential technical or schedule risk.
 - 1.6.3.4 Provide detailed plans and procedures for testing (including environments) and discuss testing rationale.
 - 1.6.3.5 Provide detailed parts, assembly and interface drawings; list of materials with pedigree, and process specifications at least two (2) weeks prior to this review.
 - 1.6.3.6 Deliver BDR data package including information in 1.6.3.1 through 1.6.3.5 above to JPL. 1 week prior to the BDR
 - 1.6.3.7 Initiate and maintain an action item list.
- 1.6.4 Development Design Review (DDR): Conduct a DDR based on the HFR design concept developed under 1.4 above. The content of the DDR shall include but not be limited to the following:
 - 1.6.4.1 Provide a design description including top and detail level layouts and drawings of design along with supporting analysis.
 - 1.6.4.2 Quantify the expected compliance of the design with the goals of Exhibit 1.
 - 1.6.4.3 Identify areas of potential technical or schedule risk.
 - 1.6.4.4 Provide detailed plans and procedures for testing (including environments) and discuss testing rationale.
 - 1.6.4.5 Provide detailed parts, assembly and interface drawings; list of materials with pedigree, and process15 months after date of contract

- specifications at least two (2) weeks prior to this review.
- 1.6.4.6 Deliver DDR data package including information in 1.6.4.1 through 1.6.4.5 above to JPL 1 week prior to the DDR
 - 1.6.4.7 Initiate and maintain an action item list.
 - 1.6.5 Critical Design Review (CDR): Conduct a CDR based on the HFR design concept developed under 1.5 above... The content of the CDR shall include but not be limited to the following: 20 months after date of contract
 - 1.6.5.1 Provide a design description including top and detail level layouts and drawings of design along with supporting analysis. Design description should include traceability of detail changes from design description presented in 1.6.4 above.
 - 1.6.5.2 Quantify the expected compliance of the design with the goals of Exhibit 1.
 - 1.6.5.3 Identify areas of potential technical or schedule risk.
 - 1.6.5.4 Provide detailed plans and procedures for testing (including environments) and discuss testing rationale.
 - 1.6.5.5 Provide detailed parts, assembly and interface drawings; list of materials with pedigree, and process specifications at least two (2) weeks prior to this review.
 - 1.6.5.6 Deliver CDR data package to JPL including information in 1.6.5.1 through 1.6.5.5 above. 1 week prior to CDR.
 - 1.6.5.7 Initiate and maintain an action item list.
 - 1.6.6 Monthly Management Reviews in accordance with Exhibit II at the Contractor's Facility between the Technical Manager and other appropriate JPL personnel in order to discuss accomplishments, schedule, problems/solutions, financial and contractual issues, and planned activities Monthly beginning 1 month ADOC
 - 1.6.7 Deliver the NASA form 533M or equivalent in accordance with Exhibit II. Monthly on or before the 15th

- 1.7 Applicable Documents: The following Exhibits are hereby incorporated into and made a material part of the Contract:
 - 1.7.1 Exhibit I, "Preliminary MSL High Flow Helium Pressure Regulator Goals" dated 7/21/2003.
 - 1.7.2 Exhibit II, "MSL High Flow Regulator Contract Plans and Deliverable Documentation", dated 8/6/2003
 - 2.0 JPL will
 - 2.1 Participate in meetings and reviews.
 - 2.2 Review design trades, and analyses and review and approve designs within fifteen (15) working days of receipt of those items.
 - 2.3 Review and approve CDRLS, test plans and test procedures within fifteen (15) working days of receipt of those items.
 - 3.0 Delivery Instructions
 - 3.1 Except as otherwise provided in this Contract, the point of inspection, acceptance and delivery of all supplies deliverable under this Contract shall be the Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena, California 91109. All such supplies shall be packaged, packed, boxed, or crated in such a manner to ensure safe delivery and shall be shipped prepaid and at the Contractor's expense to the point of delivery.
 - 3.2 The Contractor shall furnish the Contracting Officer (CO) with the annual and final reports of reportable items described in the Article entitled "New Technology." Copies of transmittal letters for those reports shall be sent to the Intellectual Property Office (IPO) and to the cognizant JPL negotiator.
- OR
- 3.2 The Contractor shall provide the Contracting Officer (CO) the annual and final reports of subject inventions described in the Article entitled "Patent Rights - Retention by the Contractor (Short Form)." Copies of transmittal letters shall be sent to the Intellectual Property Office (IPO) and to the cognizant JPL negotiator.

ARTICLE 2. ALLOWABLE COSTS, FIXED FEE AND PAYMENT.

1.0 Estimated Cost and Fixed Fee.

Estimated Cost:	\$ TBD
Fixed Fee:	\$ TBD
Total:	\$ TBD

Subject to any equitable adjustment which is otherwise provided for under the provisions of this Contract, the fixed fee stated above shall remain constant for the performance of the work under this Contract. There shall be no adjustment in the amount of fixed fee or any claim for increased fixed fee because of errors or omissions made in computing the estimated cost or the fact that the actual cost varies from the estimated cost.

The total amount allotted to this Contract is \$

- 2.0 Precontract Costs. There shall be no allowance for costs incurred prior to the date of this Contract. If this Definitive Contract has been preceded by a Letter Contract, the phrase "date of this Contract" as used in this paragraph 2.0 shall mean the effective date of the Letter Contract.
- 3.0 Payment of Fixed Fee. The fixed fee payable under this Contract shall be paid to the Contractor in monthly installments based upon the percentage of work completed as estimated by the Contractor and approved by JPL; subject, however, to the provisions of the "Allowable Cost and Payment" Article of this Contract.
- 4.0 Invoices. Invoices shall be submitted, in triplicate, to JPL Subcontract Payment Group, 4800 Oak Grove Drive, Pasadena, California 91109.
- 5.0 Allowable Costs. For the purpose of determining the amounts payable to the Contractor under this Contract, the allowability of costs shall be determined in accordance with the General Provision (GP) of this Contract entitled "Allowable Cost and Payment;" provided, however, that in determining the allowability of costs, the advance understandings, if any, on particular items of cost set forth below shall be given effect. In the event of any inconsistency between such advance understandings and the cost principles referred to in the "Allowable Cost and Payment" GP referenced above, the cost principles shall prevail.

ARTICLE 3.0. SPECIAL PROVISIONS

1.0 Data Removal from Computers.

- 1.1 The Contractor shall completely overwrite or degauss the media containing all data (which can include sensitive, Privacy Act, proprietary, and mission critical data) from hard drives and other computer storage devices and remove licensed software from Government-owned computers before such computers leave the control of the Contractor organization by transfer or disposal. JPL data shall also be removed from Contractor-owned computers when the computer will be no longer used for this Contract. The Contractor shall archive all data required to be retained, pursuant to the "Rights in Data - General" Article. Guidance on what constitutes mission-critical data and sensitive information (such as business and restricted technology information and scientific, engineering, and research information) is contained in NASA Procedure and Guidelines for Security of Information Technology (NPG) 2810, available on the worldwide web or from the JPL Negotiator. Proprietary data consists of trade secrets and other commercial or financial information confidential to the individual owner or organization. Proprietary data is normally labeled as such. Trade secrets or commercial or financial information that has been released to the public or is otherwise in the possession of persons other than the individual owner or organization is in the public domain and may no longer be entitled to proprietary protection.

- 1.2 The Contractor shall submit to JPL a written certification that all media containing all applicable JPL data have been overwritten or degaussed when returned to JPL or disposed of.

ARTICLE 4.0 OPTIONS

1.0 Option

The Contractor hereby grants to JPL the option to add the task of design, fabrication, and delivery of two (2) flight qualified "High Flow" Helium Pressure Regulators (HFR). Preliminary written notice of JPL's intent to exercise this option will be provided sixty (60) days prior to the expiration date of the period of performance specified herein. Such written notice will not be deemed to commit JPL to exercise the option. The Contractor shall provide a proposal for negotiation as requested by JPL after notification. A bilateral agreement for the option shall be negotiated and executed prior to the expiration date of the period of performance specified in Article 1 of this Contract. In the event that a bilateral agreement has not been executed prior to the expiration date specified in Article 1 of this Contract, JPL retains the right to unilaterally extend the period of performance prior to the expiration date specified in Article 1 of this Contract by written notice to the Contractor. The unilateral extension shall not exceed a three (3) month period.

IN WITNESS WHEREOF, the parties hereto have executed this Contract as of the day and year first above written.

CALIFORNIA INSTITUTE OF TECHNOLOGY

By _____
{TYPE NAME OF ACQUISITION REP HERE}

(Title)

{TYPE NAME OF CONTRACTOR HERE}

By _____
(Signature)

(Typed Name)

(Title)

Instructions to Contractor: Do not insert date on Preamble page.